MD PERSONAL STEREO SYSTEM

MDX-F1

SERVICE MANUAL

KENWOOD

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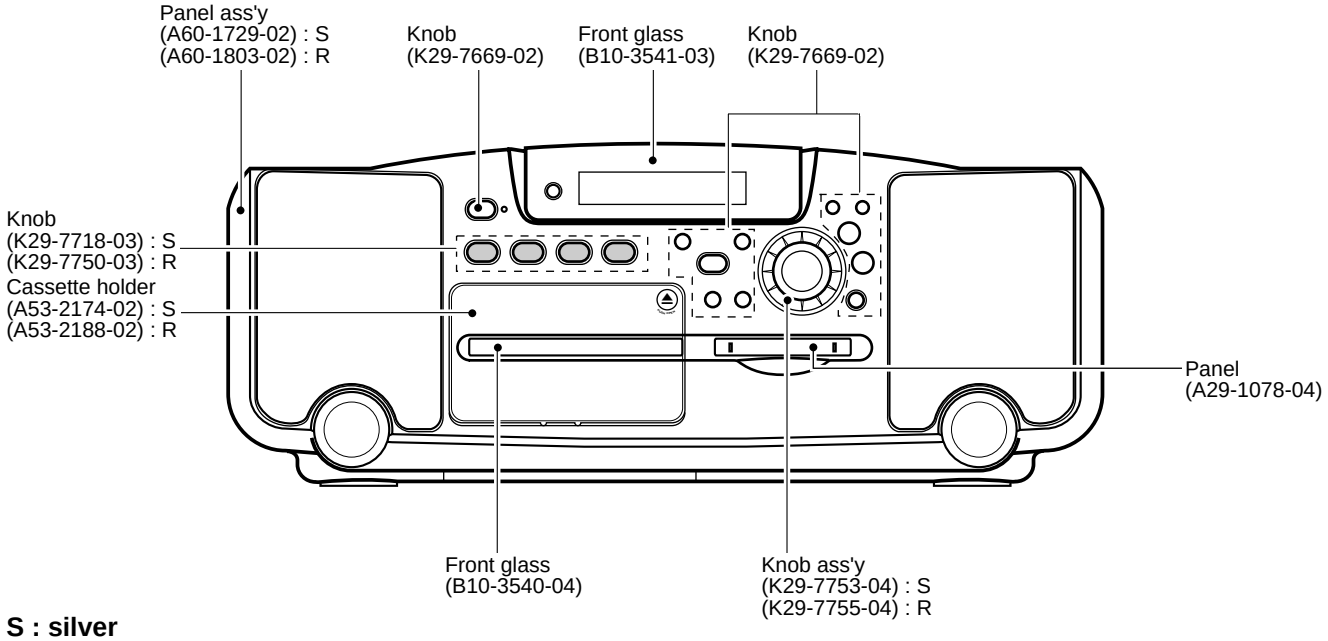
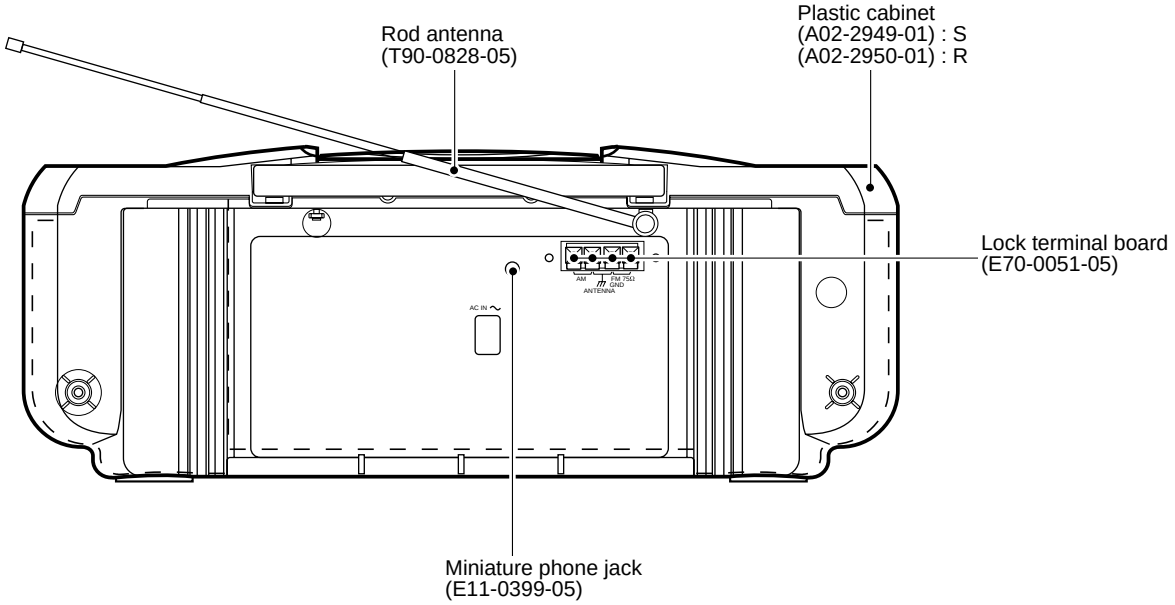


S : silver

R : red



*** Refer to parts list on page 40 .**

In compliance with Federal Regulations, following are reproductions of labels on, or inside the product relating to laser product safety.

Note: Please contact KENWOOD service in your side if you want to get the AC power cord.

KENWOOD-Crop. certifies this equipment conforms to DHHS Regulations No.21 CFR 1040. 10, Chapter 1, Sub-chapter J.

DANGER : Laser radiation when open and interlock defeated.
AVOID DIRECT EXPOSURE TO BEAM.

70%

MDX-F1

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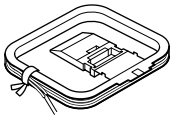
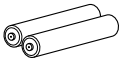
Accessories

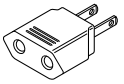
Loop antenna (1)
(T90-0852-05)



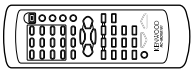
R6/SUM-3 batteries
for remote (2)



AC plug adaptor (1)
(E03-0115-05)



Remote control unit (1)
(A70-1325-05): RC-MDX0101



Battery cover (A09-1151-08)

Cautions

Operation to reset

The microcomputer may fall into malfunction (impossibility to operate, erroneous display, etc.) when the power cord is unplugged while unit is ON or due to an external factor. In this case, execute the following procedure to reset the microcomputer and return it to normal condition.

- Please note that resetting the microcomputer clears the contents stored in and it returns to condition when it left the factory.

Unplug the power cord from the power outlet then, while holding the REPEAT key depressed, plug the power cord again.

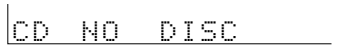
Memory backup function

Stored contents which are cleared immediately when power plug is unplugged from power outlet	Clock display **MD recorder section**
Stored contents which are cleared in at least a day after power plug is unplugged from power outlet	**Amplifier section** "on/standby" status (ON or STANDBY) Input selection Volume control value Tone control levels **Tuner section** Receiving band Frequency Preset stations Auto tuning setting **Cassette deck unit** Transport direction DOLBY NR Reverse mode **Timer setting contents**

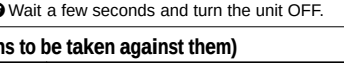
Note related to transportation and movement

Before transporting or moving this unit, carry out the following operations.

❶ Remove the CD or MD from the unit.
❷ Press the ►/II key of the MD.
❸ Wait for some time and verify that the display becomes as shown in the figure.



❹ Press the ►/II key of the CD.
❺ Wait for some time and verify that the display becomes as shown in the figure.



❻ Wait a few seconds and turn the unit OFF.

MD recorder section (Displayed messages and actions to be taken against them)

Displayed Message	Meaning	Action
NO DISC	● No disc is placed on the tray.	● Load a disc.
CAN'T COPY	● An attempt is made to record digital signal from a source while its digital copy has been prohibited by SCMS.	● Recording is not possible.
DISC FULL	● There is no recordable area on the disc. ● An attempt is made to record a 256th track.	● Use another recordable disc. ● More than 256 tracks cannot be recorded per disc.
TITLE FULL	● An attempt is made to assign a title with more characters than usable.	● Refer to **"Total number of title characters".**
BLANK DISC	● The disc does not contain any recordings.	● When playback is required, use a recorded disc.
NO TRACKS	● The disc does not contain any tracks but has a disc title.	● The disc can be used for recording without any problem.
READING	● The TOC *1 data of the disc is being read.	● This is a normal operation.
WRITING	● The data related to editing or recording is being written in the disc.	● This is a normal operation.
DISC ERROR	● The contents of UTOC *2 are abnormal.	● Perform **"ALLERASE"** operation. If this is not possible, use another disc.
CAN'T EDIT	● An attempt is made to perform editing beyond the restrictions, for example to erase a track which is too short.	● Perform editing following the restrictions.
?(blinking)	● This is a message for confirming if editing can really be executed.	● Press the **ENTER** key to execute editing.
PROTECTED	● The minidisc is write-protected.	● Cancel the write protection.
PLAY ONLY	● The minidisc is only for playback.	● Insert a minidisc for recording.
UNIT ERROR	● This indicates some trouble.	● Return to normal condition is made by switching the unit off and then on again.

*1 All minidiscs contain a Table of Contents (TOC) in addition to sound signals. The TOC is similar to the table of contents in a book and contains information, such as track numbers, track length, and character information, that cannot be rewritten.

*2 In addition to the TOC, minidiscs also contain a special User's Table of Contents (UTOC) that contains track number, track length, and character information, that can be rewritten.

Memory Backup for the MD Recorder Section

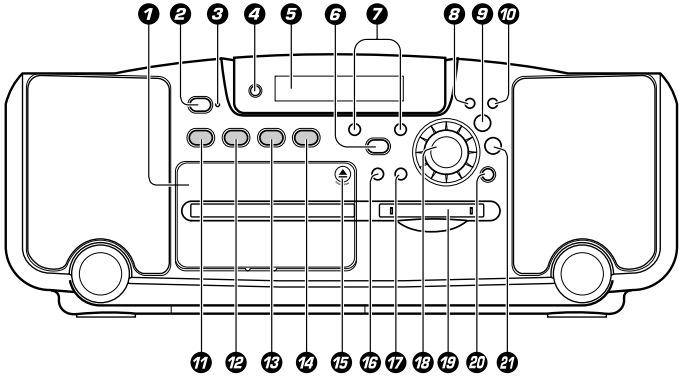
The contents of the memory are not stored on the disc if the power cord is unplugged.
If the power cord is unplugged suddenly or there is a power failure, the information on recording and editing (normally recorded when the minidisc is ejected) may be erased or destroyed before it is recorded on the minidisc. Once the information has disappeared, it can not be recovered.
After recording or editing, always remove the minidisc to record the recording or editing information.

Main unit

Top panel

PUSH OPEN button

Front panel



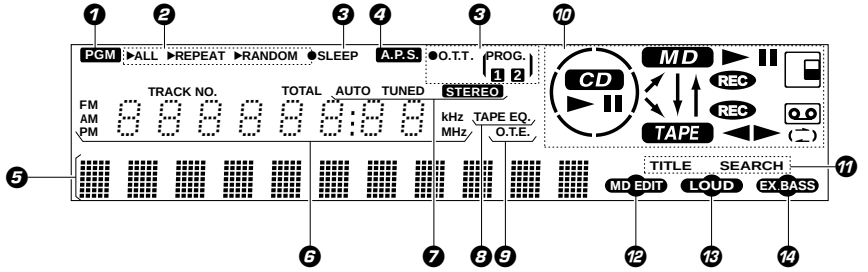
❶ Cassette holder
❷ I / ⏻ (POWER) key
❸ “STANDBY/TIMER” indicator
❹ Remote sensor
❺ Display
❻ (■) STOP key (CD/MD/TAPE/TUNING MODE)
❼ I◄◄ / ►►I key (CD/MD/TAPE/tuner tuning)
❽ “SOUND” key
❾ “MENU” key
❿ “REPEAT” key
⓫ “TUNER FM/AM” key
⓬ “CD ►/II” key
⓭ “MD ►/II” key
⓮ “TAPE ⇩ ” key
⓯ PUSH OPEN button
⓰ “TAPE REC” key
⓱ “MD REC” key
⓲ “VOLUME/MULTI CONTROL” knob
⓳ Mini Disc insertion slot
⓴ EJECT (⏏) key
㉑ “SET/Demo” key

About the one-touch operation function

This unit incorporates the one-touch operation function for the user's convenience.
With this function, pressing any key enclosed in ▭ (⓱~㉑) while the unit is in standby mode immediately start playback (or reception).

Display

(The displays given in this manual are approximations only. They may differ from what actually appears on the display.)

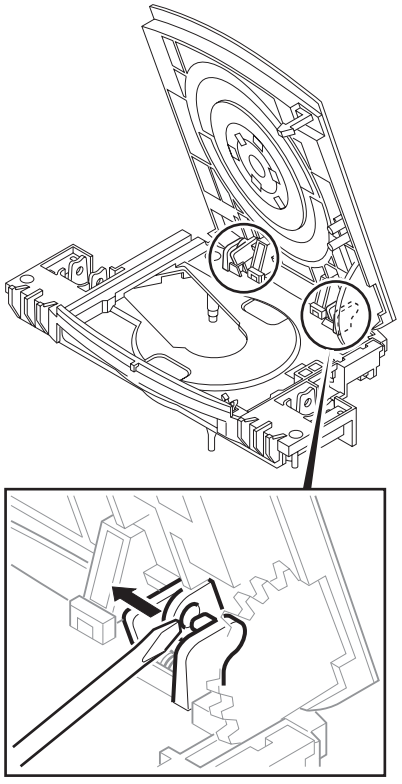


❶ PGM (program) indication
❷ Indication related to CD and MD
❸ Timer-related indicators
❹ A.P.S. (Auto Power Save) indicator
❺ Character information display section (dot display)
Shows character information including the input selection, volume level and disc/track title
❻ Character information display section
Frequency indication, time indication, track No., program No., etc.
❼ Tuner-related indicators
❽ TAPE EQ. indication
❾ O.T.E. (ONE TOUCH EDIT) indication
Appears during one-touch recording.
❿ Selector-related indicators
⓫ TITLE SEARCH indication
⓬ MD EDIT indication
⓭ LOUD (Loudness) indication
⓮ EX.BASS (extra bass) indication

DISASSEMBLY FOR REPAIR

How to Remove Door Ass'y

Insert the screw driver to contact of door ass'y and sub panel if remove door ass'y.



How to Disassemble Front Panel and Rear Panel

1 Remove 3 screws from bottom side(❶X3).
2 Remove 8 screws on rear panel(❷X8).
3 Remove 3 screws on rod ant(❸X3).
4 Lift rear side of top cover and remove it.

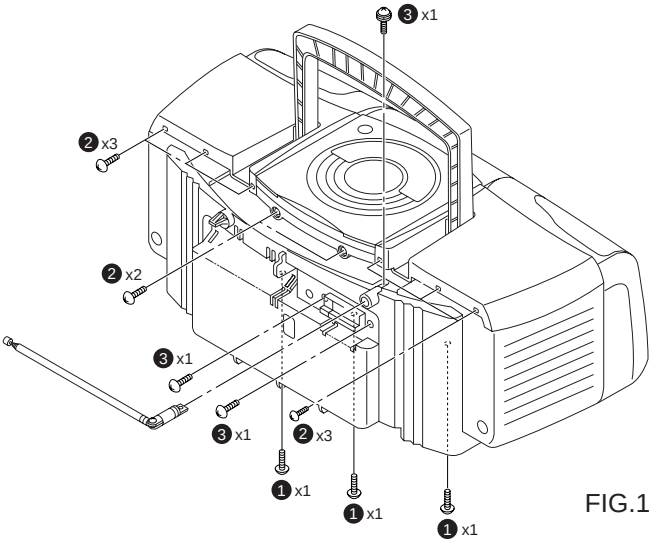
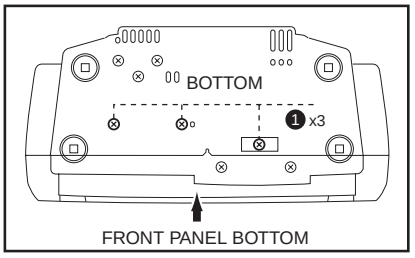


FIG.1



5 Remove 4 screws(❹X4).
6 Lift and slide CD parts of top cover by using handle
7 Remove 6 long screws(❺X6), slide front panel front-wards.

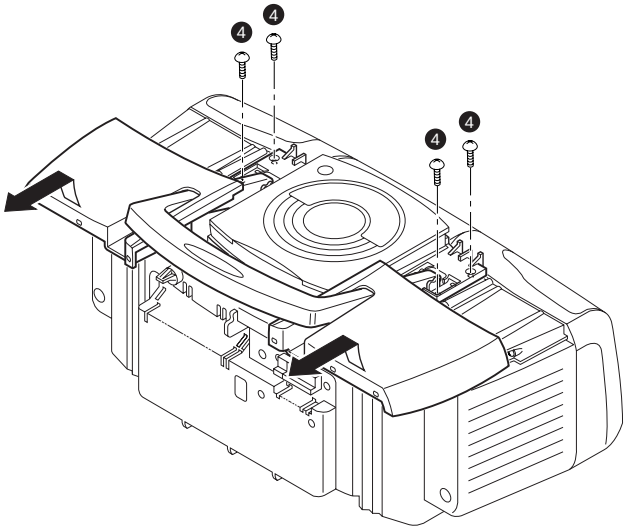


FIG.2

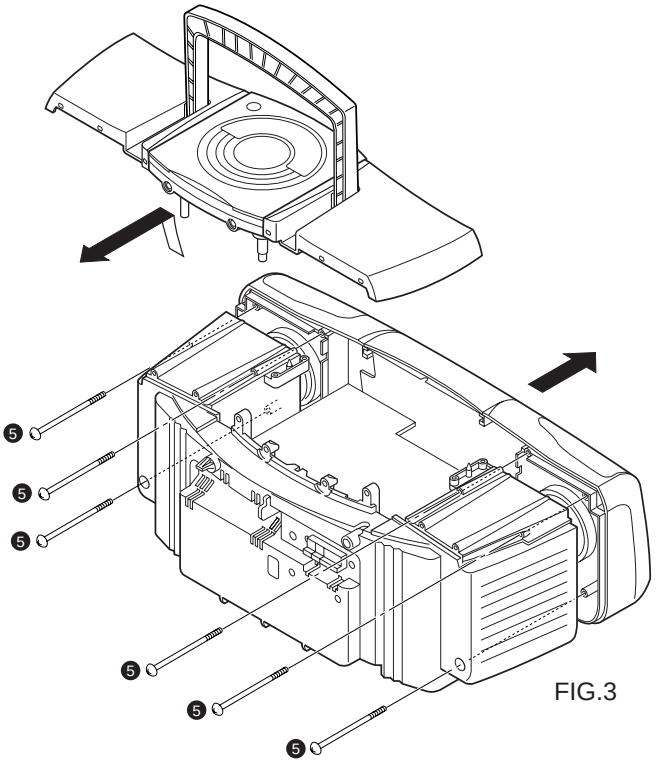


FIG.3

CIRCUIT DESCRIPTION

1. Initialization

1-1 Setting

Insert the AC power cord with pressing the REPEAT key.

1-2 Operation

Display shows "INITIALIZE" if the unit works in initialization mode. It shows "STANDBY" after the unit is end of work.

The unit is shipment condition(MD disc comes out, RAM is clear, Backup data is also.) if normal mechanisms are initialization.

Display shows error message as follows if the every mechanism has an initialization error and CD door switch malfunction.

	Error
CD	The first digit: C
MD	The third digit: M
CASSETTE	The 5th digit: X
CD DOOR SW	The 7th digit: S

2. TUNER Preset

P.CH	BAND	FREQ	P.CH	BAND	FREQ
1	FM	83.50MHz	6	FM	90.00MHz
2	FM	76.00MHz	7	FM	76.00MHz
3	FM	89.10MHz	8	AM	1629kHz
4	FM	108.00MHz	9	AM	1602kHz
5	FM	91.50MHz	10	AM	999kHz
11	AM	630kHz	26	FM	76.00MHz
12	AM	1440kHz	27	FM	76.00MHz
13	FM	106.00MHz	28	FM	76.00MHz
14	AM	531kHz	29	FM	97.50MHz
15	FM	76.00MHz	30	FM	106.00MHz
16	FM	91.50MHz	31	FM	76.00MHz
17	FM	92.50MHz	32	FM	76.00MHz
18	FM	76.00MHz	33	FM	76.00MHz
19	AM	990kHz	34	FM	76.00MHz
20	FM	91.40MHz	35	FM	76.00MHz
21	AM	531kHz	36	FM	76.00MHz
22	FM	76.00MHz	37	FM	76.00MHz
23	FM	76.00MHz	38	FM	76.00MHz
24	FM	76.00MHz	39	FM	108.00MHz
25	FM	76.00MHz	40	AM	945kHz

3. TUNER SPECIFICATIONS

BAND	RECEIVING FREQ.	CHANNEL SPACE	IF	PLL
FM	76.0MHz~87.5MHz	100kHz	-10.7MHz	25kHz
FM	87.5MHz~108MHz	50kHz	-10.7MHz	25kHz
AM	531kHz~1629kHz	9kHz	+450kHz	9kHz

4. MAIN MICROPROCESSOR: M30622MC-746(X09,IC601)

4-1 Port descriptions

Port #	Port Name	I/O	Descriptions	ACTIVE	
				H	L
1	DSTP	O	CD disc motor servo control output port	OFF	ON
2	XLON	O	Bias control port	ON	OFF
3	LDC	O	LD control	OFF	ON
4	SCLK	O	CD sense data read clock		
5	SENSE	I	CD sense input	1	0
6	CD CLK	O	Clock for CD DSP		
7	XLAT	O	CD DSP latch output		
8	BYTE	I	GND		
9	CNVSS	I	GND		
10	XCIN	I	Timer clock(32.768kHz)		
11	XCOUT	O	Timer clock(32.768kHz)		
12	RESET	I	Microprocessor reset signal input	NORMAL	RESET
13	XOUT	O	Main clock port		
14	VSS	-	GND		
15	XIN	I	Main clock port (10MHz)		
16	VCC(B.U.)	-	Power supply port (+5V)		
17	NMI	I	+5.0V		
18	REMOCON	I	Remote control signal input port		
19	NC	O	open		
20	SCOR	I	Sub-code synchro signal port		
21	XRST	O	CD DSP reset signal output port	NORMAL	RESET
22	PLL DO	I	PLL data input port		
23	SA CE	O	PLL IC chip enable		
24	SA CLK	O	PLL IC clock		
25	SA DATA	O	PLL IC data output port		
26	ST	I	Stereo sensor port for tuner	MONO	STEREO
27	SD	I	SD sensor port for tuner	UNTUNED	TUNED
28	SQCK	O	Sub-code clock for CD		
29	SQSO	I	Sub-code input port for CD		
30	NC	O	open		

CIRCUIT DESCRIPTION

Port #	Port Name	I/O	Descriptions	ACTIVE	
				H	L
31	FL DATA	O	Output port for FL driver		
32	NC	O	open		
33	FL CLK	O	Clock output port for FL driver		
34	CD DOOR SW2	I	CD DOOR OPEN sensor switch		ON
35	K DATA	O	Data transmission port to MD(UART)		
36	MD DATA	I	Data input port from MD(UART)		
37	DSCK	O	MD IC clock		
38	CD DATA	O	CD DSP data output port		
39	DSTB	O	MD STB output port		
40	SDA(EPROM)	-	open		
41	SCL(EPROM)	-	open		
42	MD RST	O	Reset signal port for MD	RESET	NORMAL
43	PDOWN	O	MD POWER	ON	OFF
44	MD ST	O	MD ON/CD SYNC		
45	SEARCH	O	MD SEARCH output port		
46	LOAD SW	I	MD LOADING sensor switch input port	OFF	ON
47	CD DOOR SW1	I	CD DOOR sensor switch port	OFF	ON
48	RDS DATA	-	GND		
49	MD NOT	-	GND		
50	F1/MICRO	-	GND		
51~56	NC	-	open		
57~59	DSW0~DSW2	-	GND		
60	DSW3	I	Destinations selector	J TYPE	M TYPE
61	VOL CLK	O	System IC		
62	VCC(B.U.)	-	Power supply port (+5V)		
63	A120/70	O	Playback EQ selector		
64	AVSS	-	GND		
65	A/B-2	O	Cassette deck operation mode selector		
66	A/B-1	O	Cassette deck operation mode selector		
67	BT/2	O	Cassette deck operation mode selector		
68	REC/PLAY	O	Cassette deck rec/play mode selector	REC	PLAY
69	BEAT CANCEL	O	Beat cancel control port	ON	OFF
70	BIAS	O	Bias control port	ON	OFF
71	CPM	O	Cassette deck motor control port	ON	OFF
72	SOL	O	Cassette deck solenoid control port	ON	OFF
73	PLAY SW	I	Cassette deck play switch control port	OFF	ON
74	CrO2 SW	I	CrO2 tape detection	CrO2	NORMAL
75	PACK SW	I	Cassette half switch control port	OFF	ON
76	REC F	I	Cassette deck forward rec switch control port	OFF	ON
77	REC R	I	Cassette deck revise rec switch control port	OFF	ON
78	VOL DATA	O	System IC data port		
79	A MUTE	O	Audio mute control port	OFF	ON
80	STBY	O	STANDBY control port		
81	NC	O	open		
82	POWER	O	MAIN POWER control port	OFF	ON
83	FL RST	O	Reset signal output port for display	NORMAL	RESET
84	FL CE	O	Chip enable signal output port for display		
85	ENC1	I	Rotary encoder input1 port		
86	ENC2	I	Rotary encoder input2 port		
87	LEDR	O	LED(STANDBY,RED) control port	ON	OFF
88	LEDG	O	LED(TIMER,GRN) control port	ON	OFF
89	PHOTO	I	Cassette deck turning detection		
90,91	KEY2,KEY1	I	Key a/d converter input port		
92	NC	O	open		
93	ADP3	I	Protection signal I/o port 3(ON: less0.5V)		
94	ADP1	I	Protection signal I/o port 1(ON: less0.5V)		
95	ADP2	I	Protection signal I/o port 2(ON: less0.5V)		
96	AVSS	-	GND(A/D)		
97	CE	I	BACK UP detection port		
98	VREF	-	A/D converter standard voltage (+5V)		
99	VCC(B.U.)	-	A/D converter power supply(+5V)		
100	CD POWER	O	CD DSP power supply control	ON	OFF

CIRCUIT DESCRIPTION

5. Voltage Key Matrix

(port # of IC601)

Voltage of Key	0~0.35V	0.5~0.9V	1.0~1.5V	1.6~2.1V	2.2~2.8V	2.9~3.4V	3.5~4.0V	4.1~4.6V	4.8~5.0V
KEY1(#91)	SOUND	REPEAT	MENU	SET	MD EJECT	MD REC	-	TAPE REC	OFF
KEY2(#90)	POWER	STOP	MD PLAY/PAUSE	CD PLAY/PAUSE	TUNER FM/AM	TAPE PLAY	SKIP UP	SKIP DOWN	OFF

6. MD System Microprocessor:IX0342AW(IC1401)

Port #	Port Name	I/O	Description
1	4M/16M	I	GND
2	64M	I	GND
3	LDVAR	O	Laser power adjust port
4	ADJS	O	Check port
5	CIN	I	Track count port
6	NC	-	No use
7	UNLOCK	I	GND
8	BYTE	I	GND
9	CNVSS	I	GND
10	STID OUT	O	ST-ID output port
11	SEACH OUT	O	MD research port
12	RESET	I	Reset signal input port
13	NC	-	No use
14	VSS	-	GND
15	MCCK	I	8.4672MHz
16	VCC	I	+3.2v
17	NC	I	Connection to H level
18	DINT	I	Interrupt signal from MD LSI
19	SFSY	I	Frame synchro
20	ST-ID	I	ST-ID IN/MD ON/re-power after power breakdown
21	SERCH	I	CD search input port
22	MDR SW	O	Save control motor drive
23	CDB SEL	O	CD BLK SEL output port
24	DSENSE	I	Servo SENSE signal form MD LSI input port
25	PDOWN	I	Power down detection port
26	HDON	O	Current control of record head
27	EEPROM	O	Cancel signal output port to EEP-ROM
28	4.23	O	4.23MHz
29	EEPK	O	EEP-ROM serial clock port
30	EEPD	I/O	EEP-ROM data I/o port
31	MDDATA	O	MD data output port
32	KDATA	I	System data input port
33	DSCK	I	System synchro clock input port
34	DSTB	O	System line busy or to permit usage
35	DATA	O	R data
36	SBO	I	Serial data in sub code input port
37	SBCK	O	System line of serial clock in sub code output port
38	LATCH	O	R-latch
39	R/P	O	Rec/play selector
40	FOK	I	Focus servo monitor port
41	FLASH L	I	No use
42	CLOCK	O	R clock
43	SYRS	O	MD LSI resister selector output port
44	SYRD	O	MD LSI read signal output port
45	SYWR	O	MD LSI wright signal output port
46	FLASH H	I	No use
47-54	SYSD(7-0)	I/O	MD LSI data bus(0-7)
55-59	SLOT(1-5)	I	No use
60	NC	O	No use
61	CRTRO SW	I	GND
62	VCC	I	+3.2V
63	INNER	I	Pickup start position detection port
64	GND	-	GND
65	L3DATA	O	AD/DA serial data output port
66	L3MODE	O	AD/DA serial mode output port
67	L3CLK	O	AD/DA serial clock output port

CIRCUIT DESCRIPTION

Port #	Port Name	I/O	Description
68,69	NC	O	No use
70	PCNTO	O	Power control output port
71	EJECT	O	No use
72	LDON	O	Laser diode on signal port(H:ON)
73	A/B	I	AD/DA converter selector (in or out)
74	SBSY	I	Synchro signal input port
75	DAPON	O	No use
76	DFSO	O	No use
77	DFSI	O	No use
78	5/3	I	GND
79	C/N	I	GND
80	XRST	O	MD LSI reset signal port
81	ADMUTE	O	AD muting port
82	LD+	O	Loading motor positive control port
83	LD-	O	Loading motor negative control port
84	MUTE	O	Muting signal output port
85	DOUT MT	O	No use
86-88	TEST(2-0)	I	No use
89	AVCK3	I	Power supply monitor of motor driver
90	AVCK2	I	Power supply monitor of AD/DC converters
91	AVCK1	I	Power supply monitor of head circuit
92	DTEMP	I	Temperature monitor port
93	MINF	I	Disc, rec window,mechanism position
94,95	TEST(K1-K2)	I	No use
96	GND	-	GND
97	NC	O	No use
98	VREF	I	+3.2V
99	AVCC	I	+3.2V
100	PR	I	GND

7. Test Mode

7-1 Setting

Mode	Key	Setting	Remarks
AUX	SOUND	Insert the AC power cord with pressing the left key	
TUNER	TUNER		
CD	CD PLAY		
MD -1	MD PLAY		
* TAPE	TAPE PLAY		**TAPE REC key
*** FTC & sub clock oscillation	MENU		
MD-2	SET		

* Operation & Display in Test Mode

E E E E → CrO2 detection

H= sw off (E)
L= sw off (-)

Half detection
FWD misrecord detection
RVS misrecord detection

** In Tape Mode, 4 seconds recording mode only.

*** FTC & Sub clock Oscillation

a) Check the oscillation(yes or no, period)before FTC test mode.
b) Check is 5 times by 200ms. FTC test mode is carried out if one time is OK.
c) Display shows error message as follows and test mode will be stop.
No oscillation → ERR 1 Poor period → ERR 2

7-2 Cancel

a. Cancel the test mode and initialize the unit if pull out the power cord from AC outlet.
b. Cancel the test mode only if the power switch is off.

7-3 Operation in Test Mode

a. Muting does not work except power on/off.
b. No display demo mode.
c. Key is different operation from normal mode.

CIRCUIT DESCRIPTION

7-4 Key Operation in Test Mode

7-4-1 Tuner Mode

Key	Display	Descriptions
STOP	Normal mode	Select the receiving mode of AUTO(STEREO) or MANUAL(MONO)
SOUND	Normal mode	Select the preset memory by ten step. →10→20→30→40→00(--)→
MD REC TAPE REC	Normal mode	TUNING DOWN/UP
SKIP DOWN SKIP UP	Normal mode	P.CH DOWN/UP
SET/DEMO	A MUTE ON→MUTE ON →MUTE OFF→	Mute operation works alternately: →AUDI0 MUTE →MUTE ON→MUTE OFF→

7-4-2 CD Mode

Key	Display	Descriptions
CD PLAY	05 - - : - -	TRACKING-SERVO:ON
	03 - - : - -	TRACKING-SERVO:OFF
	01 - - : - -	Stop to operation
	07 TB value/ FB value	Both TB and FB values
STOP*	08 TG value/ FG value	Both TG and FG values
	09 FE value/ RF value	Both FE and RF values
	10 TE value /VC value	Both TE and VC values
SKIP UP	EX : 01~02	CD's track up operation
MD REC	Time	CD's FF operation. Feed the pickup outwards at STOP mode
SKIP DOWN	EX : 02~01	CD's track down operation
TAPE REC	Time	CD's FB operation. Feed the pickup inwards at STOP mode.

*Value shows self-adjustment result and hex.

7-4-3 MD Mode

Key	Display	Descriptions
STOP	01 - - : - -	Stop the MD operation. Muting is off.
SOUND	DIGITAL	In STOP mode, select the input of recording
	ANALOG	In STOP mode, select the input of recording
SKIP UP	EX : 01~02	MD's track up operation
SKIP DOWN	EX : 02~01	MD's track down operation
SET	ALL ERASE	Stop the MD operation. Start operation of ALL-ERASE if disc is recordable.
REPEAT	Normal mode	One Touch Edit operation starts.

CIRCUIT DESCRIPTION

7-4-4 MD SECTION

1. Preparation for Adjustment(MD-2)

You have to carry out the following test mode items if replace MD mechanism, pickup, head and pc board.

1-1 Procedure

1. Short-circuit #4(vss) and #7(wp) of IC1402(EEPROM).
2. Set the unit to test mode and carry out the every adjustment in test mode.
3. Stop the test mode by pressing the STOP key for 3 secs
4. Remove the short circuit of IC1402. Carry out reset start.

Repair(replace)	Temperature Standard Set	EEPROM set value check	Auto pre adj	Auto adj	Auto Fab adj	*EEPROM data write	** Operation check	
	TEMP	EEPROM_SET	AUTO_YOBI	AUTO_ADJ	AUTO_FAB	CANCEL TEST MODE	TEST-PLAY	TEST-REC
pickup	-	1	2	3	4	5	6	7
recording head	-	-	-	-	-	-	-	1
mechanism	-	1	2	3	4	5	6	7
pcb parts	1	2	3	4	5	6	7	8
MD microprocessor	-	1	-	-	-	2	3	4
MD LSI	-	-	1	2	3	4	5	6
RF iC	1	2	3	4	5	6	7	8
EEPROM	1	2	3	4	5	6	7	8

note: figures order of steps. - = no need.

* Result of EEPROM

OK_EEPROM	Write the data of setting values and AUTO-pre adjustment perfectly.
WR_EEPROM	Write the data of setting values perfectly however not write AUTO pre-adjustment. Carry out AUTO-pre adjustment and write data to EEPROM.
NG_EEPROM	Not write the data of setting values. Check the connection of MD microprocessor and EEPROM.

** Carry out the TEST-PLAY , TEST-REC and C1 error in test mode after AUTO_ADJ and AUTO_FAB.

1-2 Test disc

	Type	Test disc
1	High reflection disc	TGYS1 (SONY)
2	Low reflection disc	Recording minidisc
3	————	Head Adjusting transparent

2. Test mode

Test mode setting method

1. Holding down the SET button and turn power on.
   (State Ⓐ)
2. Insert the playback disc 1 (high reflection disc) or recording disc 2 (low reflection disc).
   (During disc loading : display LOADING) (State Ⓑ is set.)
   Thus, the test mode state is set.

Ⓐ MD TEST
↓
Ⓑ AUT YOBI
↓
Ⓒ tsm ○○○○e○○ : TEST MODE
TEST STOP state

○○ represents version of MD microcomputer.
(When the ■ (STOP) button is ressed in the Ⓐ state, the indication Ⓒ is restored. To restore Ⓑ again, press the MD REC button.)

Entering the specific mode

Whenever the MD REC button is pressed, the mode is changed.

AUTO pre-adjustment (AUT YOBI) → AUTO adjustment (AUTO AJST) → AUT (AUT FAB) → RESULT SUB (RST YOBI) → RESULT (RESULT) → MANUAL pre-adjustment (MNU YOBI) → MANUAL adjustment (MNU AJST) → EEPROM setting (EEPROM SET) → AUTO pre-adjustment

CIRCUIT DESCRIPTION

• Canceling the test mode

When the POWER button is pressed, the test mode is canceled, and the POWER OFF state is set.

• Test Mode

1. AUTO pre-adjustment mode	• Automatic pre-adjustment is performed. (After adjustment the grating adjustment mode is set.) • The adjustment value is output with the aid of system controller interface.
2. AUTO adjustment mode	• Automatic adjustment is performed. • The adjustment value is output with the aid of system controller interface. • Continuous playback is performed. (Error rate indication, jump test)
3. AUTO FOCUS BIAS adjustment	• Focus bias adjustment is performed auto matically.
4. RESULT sub-mode	• The measurement value, set value and calculated value are indicated. • The set value is changed manually (in servo OFF state).
5. RESULT mode (final adjustment)	• The set value (after calculation) is indicated. • The set value is changed manually (in servo OFF state).
6. MANUAL pre-adjustment mode	• RF side manual adjustment is performed. • Focus and tracking signal ATT manual adjustment is performed. • Focus and tracking signal offset setting is performed.
7. MANUAL adjustment mode	• Focus and tracking signal ATT manual adjustment is performed.
8. EEPROM setting mode	• EEPROM setting
9. TEST-PLAY mode	• Continuous playback from the specified address is performed. • C1 error rate measurement.
10. TEST-REC mode	• Continuous recording from the specified address is performed. • Change of record laser output (servo gain is also changed according to laser output)
11. EJECT mode	• TEMP setting (of EEPROM setting)

1. AUTO pre-adjustment mode (Low reflection disc only)

Step No.	Setting Method	Remarks	Display
Step 1	Testmode STOP state		[t s m○○○○ e ○○]
Step 2	Press once the MD REC button.	AUTO pre-adjustment menu	[_ AUT_ YOBI_ _ _]
Step 3	Press once the MD PLAY button. End of adjustment	The slide moves to the innermost periphery, and automatic pre-adjustment is started. • During automatic adjustment ✳✳✳ changes as follows. HAo→RFg→SAg→SBg→PTG→PCH→GTG→GCH→RCG→ SEG→RFG→SAG→HAO→HEO→TCO→LAO If adjustment is OK, Step 4. If adjustment is NG, Step 5.	[✳✳✳ : _ _ _ _ _ _]
Step 4	Grating adjustment, adjustment value output Press once the MD STOP button.	 STEP 2	[_ C O M P L E T E _]
Step 5	Adjustment value output Press once the MD STOP button.	 STEP 2 AUTO pre-adjustment menu	[AUT YOBI]

• ✳✳✳ : Adjustment name, □□□□ : Address

2. AUTO adjustment mode

Step No.	Setting Method	Remarks	Display
Step 1	Testmode STOP state		[t s m○○○○ e ○○]
Step 2	Press the ENTER button two times.	AUTO adjustment menu	[A U T O _ A J S T _]
Step 3	Press once the MD PLAY button. End of adjustment	The slide moves to the innermost periphery, and automatic adjustment is started. • In case of high reflection disc ✳✳✳ changes as follows. PEG→HAG •In case of low reflection disc ✳✳✳ changes as follows. PEG→LAG→GCG→GEG→LAG If adjustment is OK, Step 4. If adjustment is NG, Step 7.	[✳✳✳ : _ _ _ _ _ _]
Step 4	Adjustment value output Press the MD PLAY button. Press the MD STOP button.	 STEP 5 STEP 2	[_ C O M P L E T E _]
Step 5	Continuous playback (groove section)		[a□□□□c○○○○]
Step 6	Press the MD STOP button.	STEP 2 AUTO adjustment menu	
Step 7	Adjustment value output Press the MD STOP button.	 STEP 2 AUTO adjustment menu	[C a n ' t _ A D J .]

• ✳✳✳ : Adjustment name, ○○ : Measurement value, □□□□ : Address

CIRCUIT DESCRIPTION

3. AUTO FAB adjusting mode

Step No.	Setting Method	Remarks	Display
Step 1	Test mode STOP state		[tsm○○○○e○○」
Step 2	Press the MD REC button three times	AUTO FAB adjustment menu	[_AUT_FAB_ _]
Step 3	Press the MD PLAY button 1 time	End of automatic adj.→ step 4 High reflection disc→ step 5	[FAB□□_△△△△」
Step 4	Press the MD STOP button	AUTO FAB adjustment menu, step 2	[●●_△△△△○○○」
Step 5		Message output for 1 sec.→ AUTO FAB. Adjustment menu(high reflection disc)	「PB_DISC_ _ _」

- ○○○○: measurement value □□: FAB value in measurement, △△△△: C1 error value in measurement, ●● : FAB value
- If the STOP button is pressed while the AUTO FAB adjustment is displayed, the state is change to the TEST mode STOP state.
- If the STOP button is pressed while the automatic adjustment is displayed, the state is change to the AUTO FAB adjustment state.

4. RESULT sub-mode

Step No.	Setting Method	Remarks	Display
Step 1	Test mode STOP state		[t s m○○○○ e ○○]
Step 2	Press the MD REC button 4 times.	RESULT sub-menu	[_ R S T _ Y O B I _]
Step 3	Press once the MD PLAY button.	Indication of measurement value	[R F G : _ _ _ _ _●]
Step 4	Press once the MD REC button.	Indication of measurement value	[R C G : _ _ _ _ _●]
Step 5	Press once the MD REC button.	Indication of measurement value	[R T G : _ _ _ _ _ ●]
Step 6	Press once the MD REC button.	Indication of measurement value	[G T G : _ _ _ _ _ ●]
Step 7	Press once the MD REC button.	Indication of measurement value	[P C H : _ _ _ _ ●●]
Step 8	Press once the MD REC button.	Indication of measurement value	[G C H : _ _ _ _ ●●]
Step 9	Press once the MD REC button.	Indication of measurement value	[S A G : _ _ _ ●●●]
Step 10	Press once the MD REC button.	Indication of measurement value	[S B G : _ _ _ ●●●]
Step 11	Press once the MD REC button.	Indication of measurement value	[S E G : _ _ _ ●●●]
Step 12	Press once the MD REC button.	Indication of measurement value	[S F G : _ _ _ ●●●]
Step 13	Press once the MD REC button.	Indication of measurement value	[H A O : ○○○ _ _ _]
Step 14	Press once the MD REC button.	Indication of measurement value	[H B O : ○○○ _ _ _]
Step 15	Press once the MD REC button.	Indication of measurement value	[H E O : ○○○ _ _ _]
Step 16	Press once the MD REC button.	Indication of measurement value	[H F O : ○○○ _ _ _]
Step 17	Press once the MD REC button.	Indication of measurement value	[L A O : ○○○ _ _ _]
Step 18	Press once the MD REC button.	Indication of measurement value	[L B O : ○○○ _ _ _]
Step 19	Press once the MD REC button.	Indication of measurement value	[L E O : ○○○ _ _ _]
Step 20	Press once the MD REC button.	Indication of measurement value	[L F O : ○○○ _ _ _]
Step 21	Press once the MD REC button.	Indication of measurement value	[T C O : _ ○○ _ _ _]
Step 22	Press once the MD REC button.	Indication of adjustment error sequence No.	[Y O B : _ □□ _ _ _]
Step 23	Press once the MD REC button.	Indication of adjustment status	[D I F : _ □□ _ _ _]
Step 24	Press once the MD REC button.	Indication of pre-adjustment not completed (00)/completed (4B)	[A D J : _ □□ _ _ _]
Step 25	Press once the MD STOP button.	RESULT sub-menu state	[_ R S T _ Y O B I _]

- ○○ : Measurement value, ●● : Adjustment value, □□ : Other various informations
- When the FF(►►)button in remote controller is pressed while the setting is displayed, the setting increases, and a new setting is stored in RAM.
- When the FB(◄◄)button in remote controller is pressed while the setting is displayed, the setting increases, and a new setting is stored in RAM.
- When the FF or FB button in remote controller is pressed continously, steps is change by 100ms period.

CIRCUIT DESCRIPTION

5. RESULT mode (final adjustment)

Step No.	Setting Method	Remarks	Display
Step 1	Test mode STOP state		[t s m○○○○ e ○○]
Step 2	Press the MD REC button 5 times.	RESULT menu	[_ R S T U L T _ _ _]
Step 3	Press once the MD PLAY button.	Indication of set value	[H A G : _ _ _ ●●●]
Step 4	Press once the MD REC button.	Indication of set value	[H B G : _ _ _ ●●●]
Step 5	Press once the MD REC button.	Indication of set value	[L A G : _ _ _ ●●●]
Step 6	Press once the MD REC button.	Indication of set value	[L B G : _ _ _ ●●●]
Step 7	Press once the MD REC button.	Indication of set value	[P E G : _ _ _ ●●●]
Step 8	Press once the MD REC button.	Indication of set value	[P F G : _ _ _ ●●●]
Step 9	Press once the MD REC button.	Indication of set value	[G E G : _ _ _ ●●●]
Step 10	Press once the MD REC button.	Indication of set value	[G F G : _ _ _ ●●●]
Step 11	Press once the MD REC button.	Indication of set value	[G C G : _ _ _ _ ●●]
Step 12	Press once the MD STOP button.	RESULT menu state	[_ R E S U L T _ _ _]

- ●● : Measurement value
- When the FF(►►)button in remote controller is pressed while the setting is displayed, the setting increases, and a new setting is stored in RAM.
- When the FB(◄◄)button in remote controller is pressed while the setting is displayed, the setting increases, and a new setting is stored in RAM.
- When the FF or FB button in remote controller is pressed continously, steps is change by 100ms period.

6. MANUAL auxiliary adjustment mode (only low reflection disc)

Step No.	Setting Method	Remarks	Display
Step 1	Test mode STOP state		[t s m○○○○ e ○○]
Step 2	Press the MD REC button 6 times.	MANUAL auxiliary adjustment mode	[_ M N U _ Y O B I _]
Step 3	Press once the MD PLAY button.	Initial setting → Temperature measuring mode	[T M P : _ △△ _ _ _]
Step 4	Press once the MD REC button.	Offset "0" setting → A signal offset tentative measurement	[H A o : △△△ _ _ _]
Step 5	Press once the MD REC button.	B signal offset tentative measurement	[H B o : △△△ _ _ _]
Step 6	Press once the MD REC button.	E signal offset tentative measurement	[H E o : △△△ _ _ _]
Step 7	Press once the MD REC button.	F signal offset tentative measurement	[H F o : △△△ _ _ _]
Step 8	Press once the MD REC button.	Offset tentative measurement → Laser ON	[L O N : _ _ _ _ _ _]
Step 9	Press once the MD REC button.	Innermost periphery move → RF side FG rough adjustment	[R F g : △△△ _ _ ●]
Step 10	Press once the MD REC button.	Focus ATT (A signal) tentative setting	[S A g : △△△○○○]
Step 11	Press once the MD REC button.	Focus ATT (B signal) tentative setting	[S B g : △△△○○○]
Step 12	Press once the MD REC button.	RF side pit section TG adjustment	[P T G : △△△ _ _ ●]
Step 13	Press once the MD REC button.	Pit section COUT level setting	[P C H : △△△ _ ○○]
Step 14	Press once the MD REC button.	Outer periphery move → RF side groove TG adjustment	[G T G : △△△ _ _ ●]
Step 15	Press once the MD REC button.	Groove section COUT level setting	[G C H : △△△ _ ○○]
Step 16	Press once the MD REC button.	RF side TCRS adjustment	[R C G : △△△ _ _ ●]
Step 17	Press once the MD REC button.	Tracking ATT (E signal) setting	[S E G : △△△○○○]
Step 18	Press once the MD REC button.	Tracking ATT (F signal) setting	[S F G : △△△○○○]
Step 19	Press once the MD REC button.	Indication of tracking EFMIO measurement	[g M I : △△△ _ _ _]
Step 20	Press once the MD REC button.	RF side pit section FG adjustment	[R F G : △△△ _ _ ●]
Step 21	Press once the MD REC button.	Focus ATT (A signal) setting	[S A G : △△△○○○]
Step 22	Press once the MD REC button.	Focus ATT (B signal) setting	[S B G : △△△○○○]
Step 23	Press once the MD REC button.	Offset "0" setting → A signal offset measurement	[H A O : △△△ _ _ _]
Step 24	Press once the MD REC button.	B signal offset measurement	[H B O : △△△ _ _ _]
Step 25	Press once the MD REC button.	E signal offset measurement	[H E O : △△△ _ _ _]
Step 26	Press once the MD REC button.	F signal offset measurement	[H F O : △△△ _ _ _]
Step 27	Press once the MD REC button.	TCRS signal offset measurement	[T C O : △△△ _ _ _]
Step 28	Press once the MD REC button.	A signal offset measurement	[L A O : △△△ _ _ _]
Step 29	Press once the MD REC button.	B signal offset measurement	[L B O : △△△ _ _ _]
Step 30	Press once the MD REC button.	E signal offset measurement	[L E O : △△△ _ _ _]
Step 31	Press once the MD REC button.	F signal offset measurement	[L F O : △△△ _ _ _]

- △△△ : Measurement value, ● : Set value, ○○○ : Account value

CIRCUIT DESCRIPTION

• When the FF(►►)button in remote controller is pressed while the setting is displayed, the setting increases, and a new setting is stored in RAM.
• When the FB(◄◄)button in remote controller is pressed while the setting is displayed, the setting increases, and a new setting is stored in RAM.
• When the FF or FB button in remote controller is pressed continously, steps is change by 100ms period.
If the measurement value is within the OK range, " ✳ " appears on the 8th character.

7. MANUAL adjustment mode

High reflection disc

Step No.	Setting Method	Remarks	Display
Step 1	Testmode STOP state		[t s m○○○○ e ○○]
Step 2	Press the MD REC button 7 times.	MANUAL adjustment menu	[_ M N U _ A J S T _]
Step 3	Press once the MD PLAY button.	Initial setting → Temperature measuring mode	[T M P : _ △△ _ _ _]
Step 4	Press once the MD REC button.	Laser ON	[L O N : _ _ _ _ _ _]
Step 5	Press once the MD REC button.	Innermost periphery move → Tracking ATT (E signal) setting	[P E G : △△△○○○]
Step 6	Press once the MD REC button.	Tracking ATT (F signal) setting	[P F G : △△△○○○]
Step 7	Press once the MD REC button.	Indication of tracking EFMIO measurement	[P M I : △△△ _ _ _]
Step 8	Press once the MD REC button.	Focus ATT (A signal) setting	[H A G : △△△○○○]
Step 9	Press once the MD REC button.	Focus ATT (B signal) setting	[H B G : △△△○○○]

• If the MD STOP button is pressed while the MANUAL adjustment menu is displayed, the state is changed to the TEST mode STOP state.

Low reflection disc

Step No.	Setting Method	Remarks	Display
Step 1	Testmode STOP state		[t s m○○○○ e ○○]
Step 2	Press the MD REC button 7 times.	MANUAL adjustment menu	[_ M N U _ A J S T _]
Step 3	Press once the MD PLAY button.	Initial setting → Temperature measuring mode	[T M P : _ △△ _ _ _]
Step 4	Press once the MD REC button.	Laser ON	[L O N : _ _ _ _ _ _]
Step 5	Press once the MD REC button.	Innermost periphery move → Tracking ATT (E signal) setting	[P E G : △△△○○○]
Step 6	Press once the MD REC button.	Tracking ATT (F signal) setting	[P F G : △△△○○○]
Step 7	Press once the MD REC button.	Indication of tracking EFMIO measurement (pit section)	[P M I : △△△ _ _ _]
Step 8	Press once the MD REC button.	Focus ATT (A signal) setting	[L A g : △△△○○○]
Step 9	Press once the MD REC button.	Focus ATT (B signal) setting	[L B g : △△△○○○]
Step 10	Press once the MD REC button.	Outside periphery move → Track closs setting	[G C G : △△△○○○]
Step 11	Press once the MD REC button.	Tracking ATT (E signal) setting	[G E G : △△△○○○]
Step 12	Press once the MD REC button.	Tracking ATT (F signal) setting	[P F G : △△△○○○]
Step 13	Press once the MD REC button.	Indication of tracking EFMIO measurement (groove section)	[G M I : △△△ _ _ _]
Step 14	Press once the MD REC button.	Focus ATT (A signal) setting	[L A G : △△△○○○]
Step 15	Press once the MD REC button.	Focus ATT (B signal) setting	[L B G : △△△○○○]

• If the MD STOP button is pressed twice while the MANUAL adjustment menu is displayed, the state is changed to the TEST mode STOP state.

8. TEST-PLAY mode

Step No.	Setting Method	Remarks	Display
Step 1	Testmode STOP state		[t s m○○○○ e ○○]
Step 2	Press the TAPE REC button.	TEST-PLAY menu	[T E S T _ P L A Y _]
Step 3	Press once the MD PLAY button.	During search the search output is set to "H", and it is returned to "L" when continuous playback is started.	
Step 4	Continuous playback (groove section)	(Address + C1 error indication)	[a □□□□ c ○○○○]
Step 5	Press once the MD STOP button.	TEST-PLAY menu	[T E S T _ P L A Y _]

• If the MD STOP button is pressed while the TEST-PLAY menu is displayed, TEST mode STOP state is set.
• If the MD PLAY button is pressed while the TEST-PLAY menu is displayed, continuous playback is started from the current pickup position.
• □□□□ : Adress, ○○○○ : Error late

CIRCUIT DESCRIPTION

9. TEST-REC mode

Step No.	Setting Method	Remarks	Display
Step 1	Test mode STOP state		[t s m ○○○○ e ○○]
Step 2	Press the TAPE button twice.	TEST-REC menu	[T E S T _ R E C _ _]
Step 3	Press once the DISPLAY/ CHARAC button.	ADRES setting (indication of address initial value)	[a 0 0 5 0 _ p w ▽▽]
Step 4	Press once the MD PLAY button.	During search the search output is set to "H", and it is (returned on "L" when continuous playback is started.Address + C1 error indication) Continuous recording	[a □□□□ p w ▽▽]
Step 5	Press once the MD STOP button.	TEST-REC menu	[T E S T _ R E C _ _]

- If the MD STOP button is pressed while the TEST-PLAY menu is displayed, TEST mode STOP state is set.
- If the MD PLAY button is pressed while the TEST-REC menu is displayed, continuous record is started from the current pickup position.
- If the FF(►►) or FB(◄◄) button in remote controller is pressed in TEST-REC mode and continuous record mode, the laser record power changes.
  (Servo gain changes also according to the record power.)
- □□□□ : Adress, ▽▽ : Laser power cord

10. EJECT mode

Step No.	Setting Method	Remarks	Display
Step 1	Test mode STOP state		
Step 2	Test mode EJECT state	Eject of MD disc	[_ _ E J E C T _ _ _]
Step 3	Press TAPE REC button.	Temperature standard value setting.	[TEMP ○○ ●●]
Step 4	Press STOP button.		[_ _ EJECT _ _ _]

- ○○: Measurement value, ●●: Setting value.

• POWER

Display	TOC recording power	Actual power output	
		Value	Voltage
00H	2.50 mW	6E H	1.354 V
01H	2.60 mW	74 H	1.427 V
02H	2.70 mW	7B H	1.513 V
03H	2.85 mW	83 H	1.612 V
04H	3.00 mW	8A H	1.698 V
05H	3.15 mW	93 H	1.809 V
06H	3.30 mW	93 H	1.809 V
07H	3.45 mW	9C H	1.920 V
08H	3.60 mW	A6 H	2.043 V
09H	3.75 mW	AE H	2.141 V
0AH	3.95 mW	B9 H	2.289 V
0BH	4.15 mW	B9 H	2.289 V
0CH	4.35 mW	C4 H	2.412 V
0DH	4.55 mW	CF H	2.547 V
0EH	4.75 mW	DB H	2.695 V
0FH	5.00 mW	DB H	2.695 V

8. MD mechanism error message

DISPLAY	DESCRIPTION
BLANK DISC	Non Recorded disc
CAN'T COPY	Inhibit to record by SCMS
CAN'T EDIT	Inhibit to edit by MD standard
CAN'T REC	Inhibit to record by disc damage(10 or more defects/recordable cluster is 0)
DISC ERROR**	OR : UTOC read error or FTNO>LTNO (edit/record) permit ALL ERASE only
	DO : Start address TNO>endless TNO (playback) handle poor TNO as 1SG
	(edit/record) permit ALL ERASE only
	C0 : Write poor data in UTOC0
	C1 : Write poor data in UTOC1
	C2 : Write poor data in UTOC2
	C4 : Write poor data in UTOC4 (play back) playback even if address roof(C0)
	(edit/record) permit ALL ERASE only
DISC FULL	No recordable area
MECH ERR**	10-13 : head poor down
	20-23 : head poor up
no disc	No disc in the unit
NO TRACKS	Disc recorded title only
NOT AUDIO	Disc recorded audio signal.
PLAY ONLY	Record to music disc
PROTECTED	Record disc inhibited to record
READING	In mode of reading TOC or UTOC
SRCH ERR**	30 : Search time over in playback, FF or FB
	31 : Search time over in REC-PAUSE
	32 : Search time over in record
TEMP OVER	High temperature
TITLE FULL	Input over letter of title
UNIT ERROR	Hardware damage
UTOC W ERR	Error of writing to UTOC
WRITING	In writing to UTOC

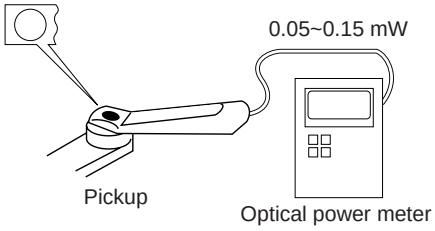
ADJUSTMENT

CD player adjustment

No.	ITEM	INPUT SETTING	OUTPUT SETTING	PLAYER SETTING	ALIGNMENT POINT	ALIGN FOR	FIG.
Step 1~3 are in TEST MODE **TEST MODE : While pressing the [CD] key, plug the AC power cord into the AC power wall outlet.**							
1	LASER POWER	–	Set the senor section of the optical power meter on the pickup lens.	Short circuit S601 and S602 (X09). Press the "PLAY" key to check that the display is "03".	–	On the power from.0.05 to 0.15mw. when the diffraction grating is correctly aligned with the RF level of 0.8Vp-p or more	(a)
2	LASER CURRENT	Test disc Type 4	Connect the DC voltmeter to CN7(#1 and #2)	Press the "PLAY" key to check that the display is "03" or "05"	–	220mV to 550mV	
3	FOCUS ERROR BIAS	Test disc Type 4	Connect an oscilloscope as follows. CH1: RF(CN7, #4) GND : VC(CN7, #3)	Press the "PLAY" key. Confirm that the display is "05".	VR201	Optimum eye pattern	(d)

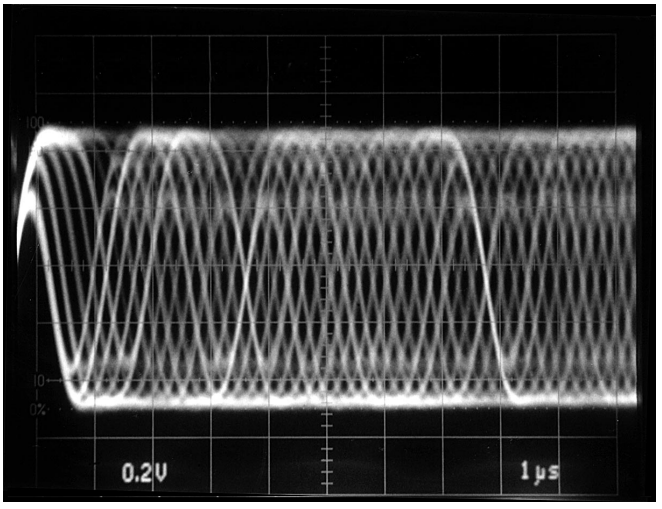
Note:
Type 4disc :SONY YEDS-18 Test Disc or equivalent. (KTD-02)
LPF : Around 47kΩ + 390pF or so.

(a) Laser Power



(d)

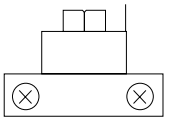
RF signal: AC coupled



- RF signal in test mode (PLAY).
- Perform the tangential and focusing offset are focused into one point on the display. The crossing points above and below the center shall also be looked clearly.

ADJUSTMENT

Cassette Deck adjustment

No	ITEM	INPUT SETTING	OUTPUT SETTING	DECK SETTING	ALIGNMENT POINT	ALIGN FOR	FIG.
Unless otherwise specified, set the respective switches as follows: SOUND MODE: OFF TONE: FLAT Ⅰ. Cassette mechanism unit (Adjustment of the REC / PLAY head)						0dBs=0.775V	
< 1 >	Demagnetization and cleaning	–	–	Demagnetization: POWER OFF Cleaning: PLAY	Recording head, erase head,capstan pinch roller	Demagnetize the REC / PLAY head with the head eraser.Clean the REC / PLAY head, erase head,capstan and pinch roller using a cotton swab slightly damped with alcohol.	
< 2 >	Azimuth of the REC/PLAY head	SCC-1227 TCC–153 MTT–114 10kHz, – 10dB	Fig. 4	PLAY	 FWD RVS	Adjust the output to maximum and adjust the azimuth adjustment screw for the Lissajours waveform pattern of the oscilloscope to become close to a 45° straight line.	
Ⅱ. PC BOARD ADJUSTMENT							
< 1 >	TAPE SPEED(NORMAL)	TCC–110 MTT–111 SCC–1727 3kHz	Fig 4	PLAY	–	Adjust the tape speed so that 3kHz(±2%) is obtained at the center of the tape.	
Ⅲ. PC BOARD ADJUSTMENT							
< 1 >	PLAYBACK LEVEL	TCC-120 315Hz, 0dB	Fig 4	PLAY (VOL: 26)	–	Check the playback output with 0dB(±2dB)	
< 2 >	BIAS CURRENT	Connect the AG to CN101 (L: #1, R: #3) in AUX test mode*. 1kHz: -20dBs 10kHz: -20dBs	Fig 4	REC and PLAY	VR 401 (L) VR 402 (R)	Record 1kHz and 10kHz alternately, and adjust the bias current adjustment potentiometer for the playback levels to become the same.	

* Turn power on with pressing the SOUND key.

ADJUSTMENT

SYSTEM CONNECTIONS

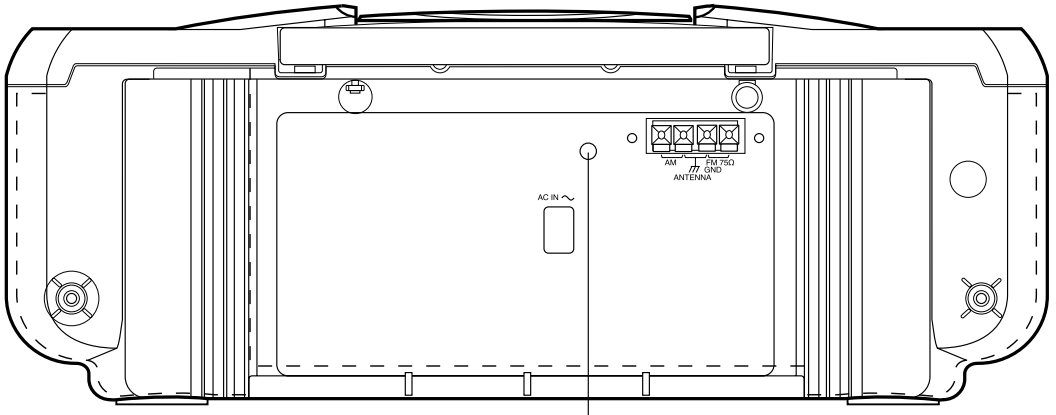


Fig.1

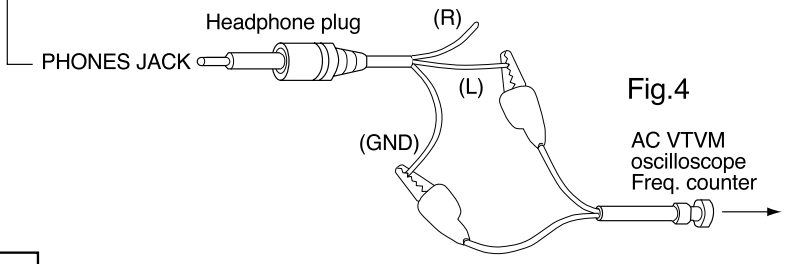


Fig.4

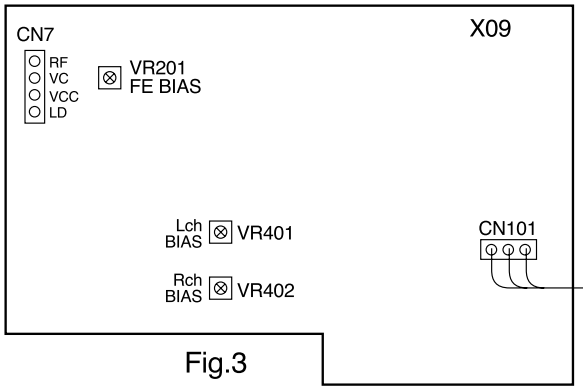


Fig.3

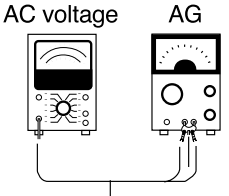
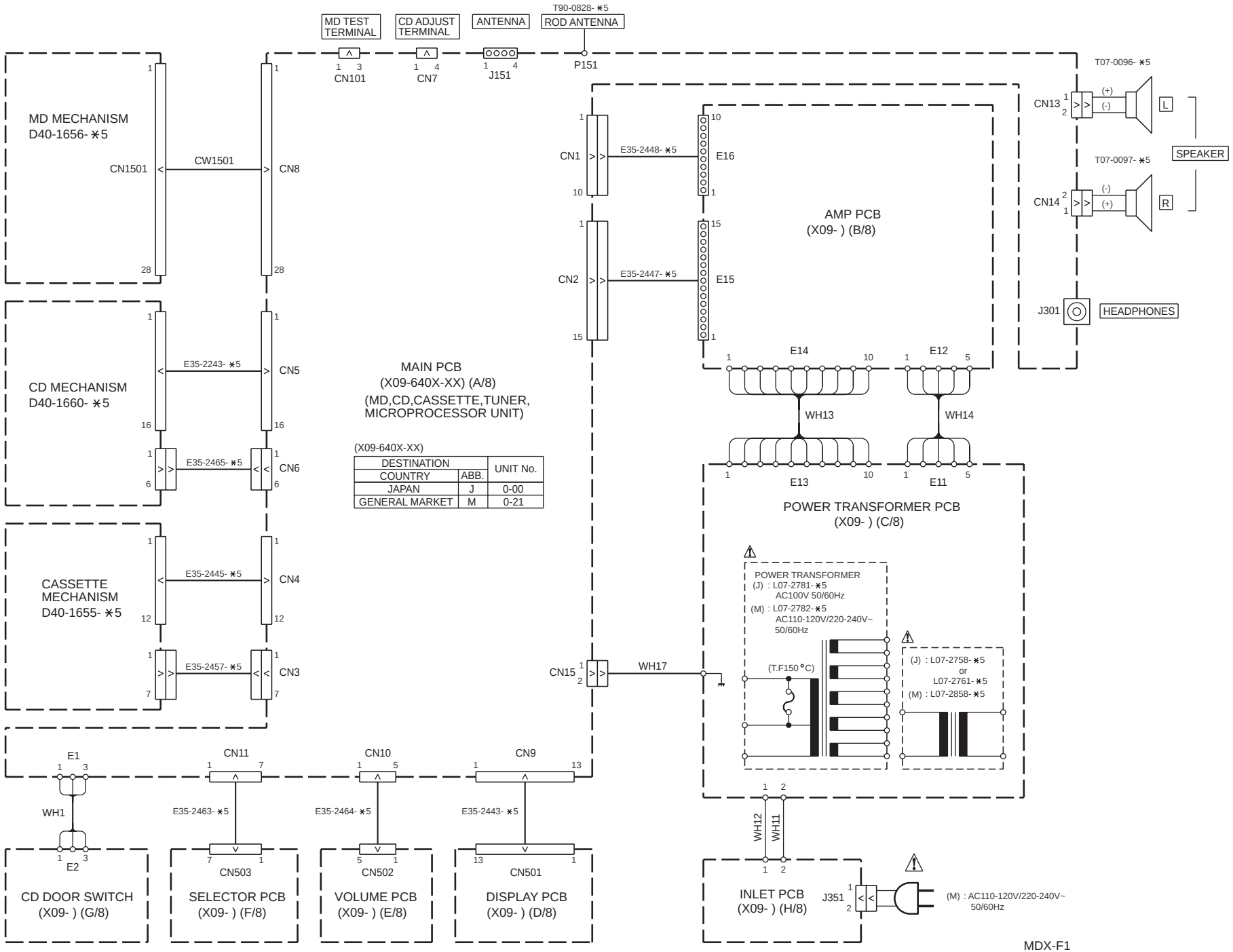


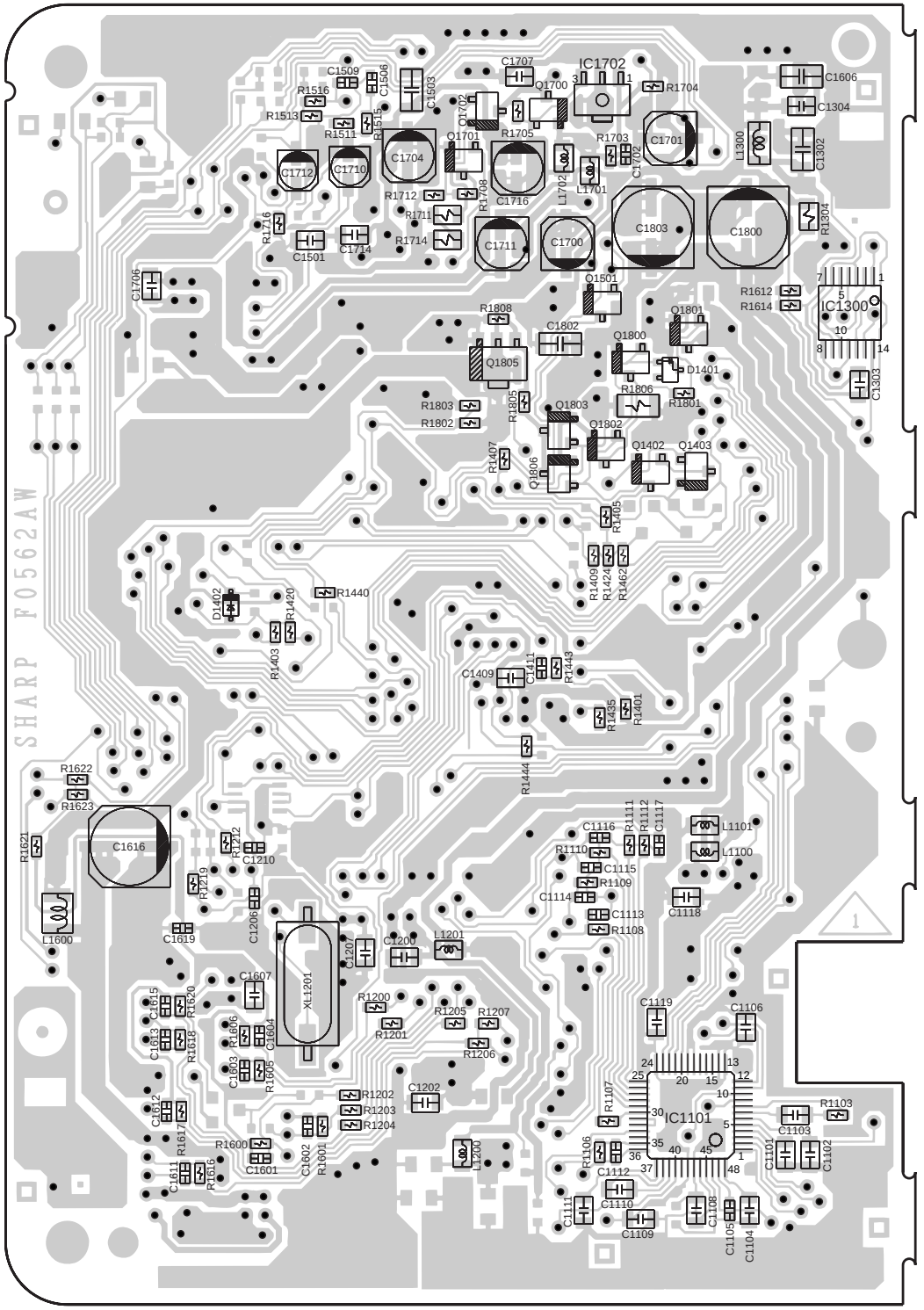
Fig.2



WIRING DIAGRAM

MDX-F1

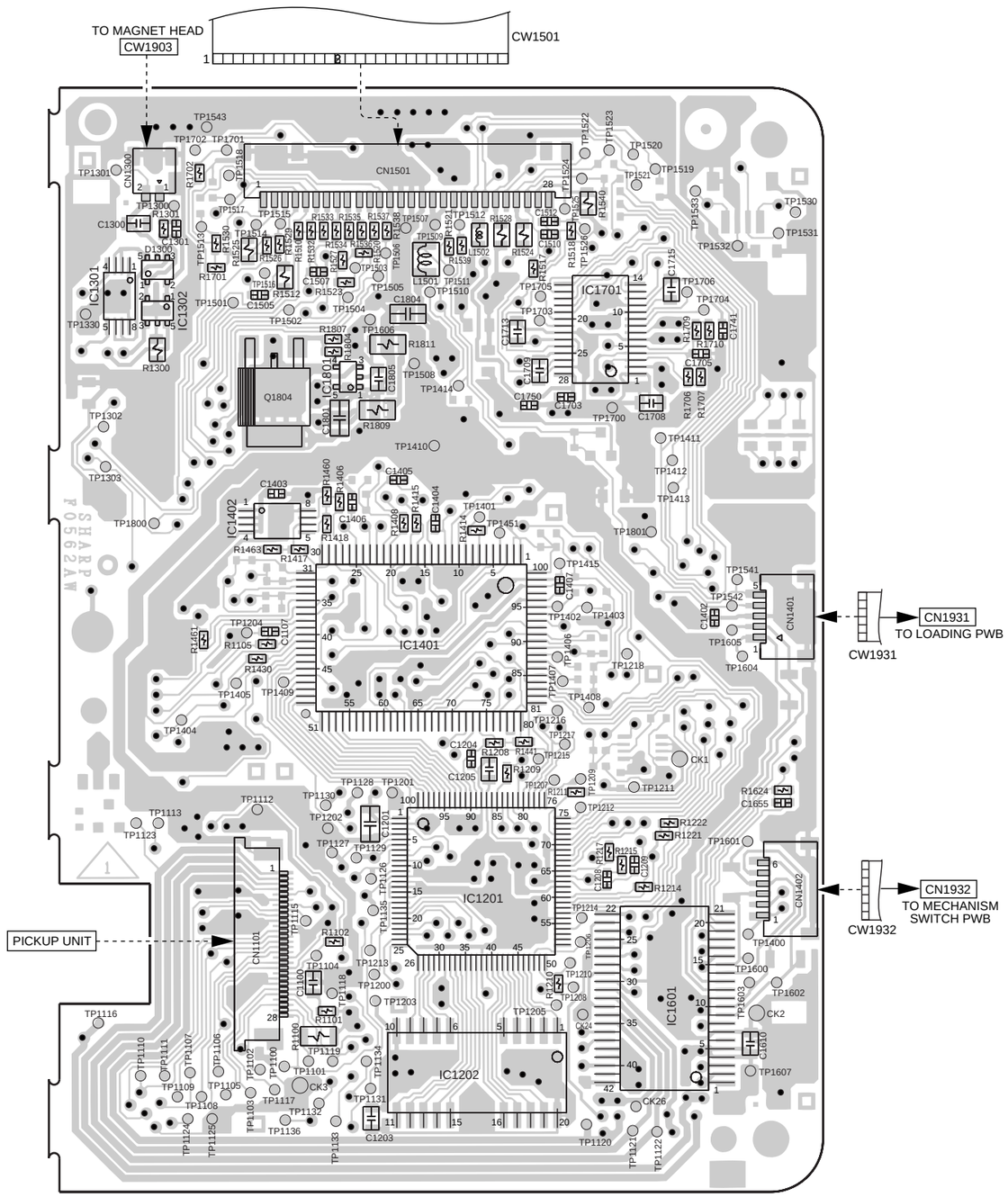
PC BOARD (Component side view)



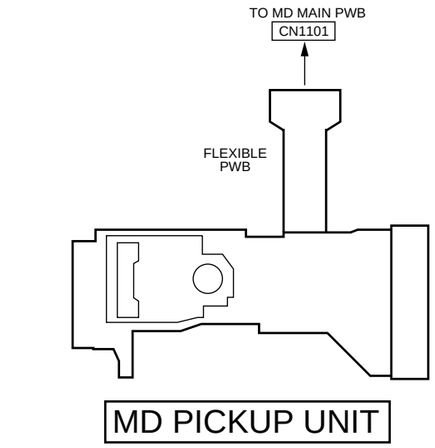
MD MAIN PWB-E (TOP VIEW)

Refer to the schematic diagram for the value of resistors and capacitors.

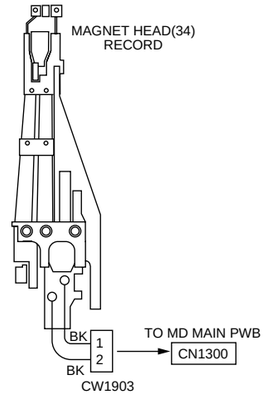
PC BOARD (Component side view)



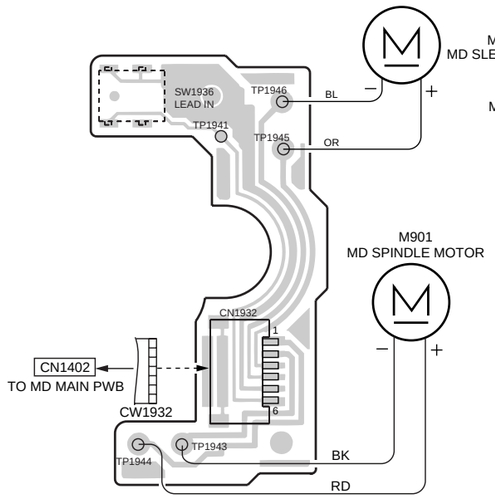
MD MAIN PWB-E (BOTTOM VIEW)



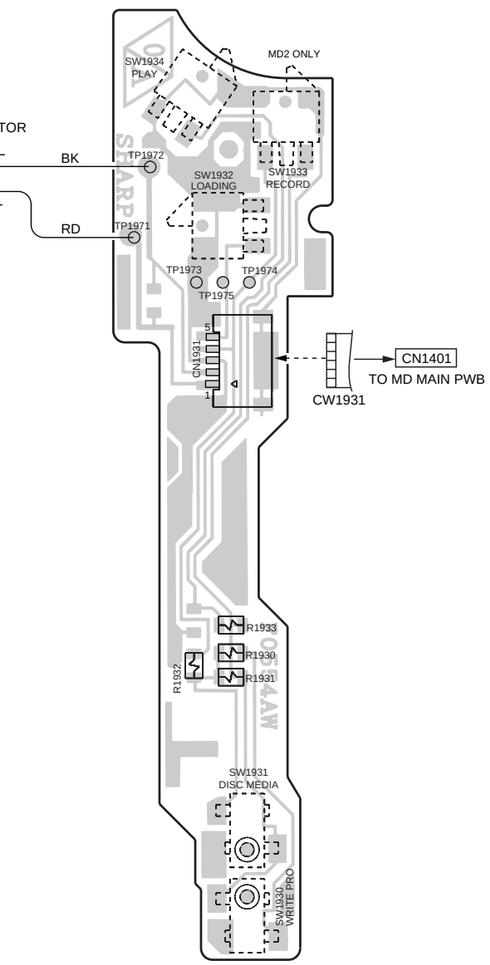
MD PICKUP UNIT



MD MECHANISM SWITCH PWB-F1



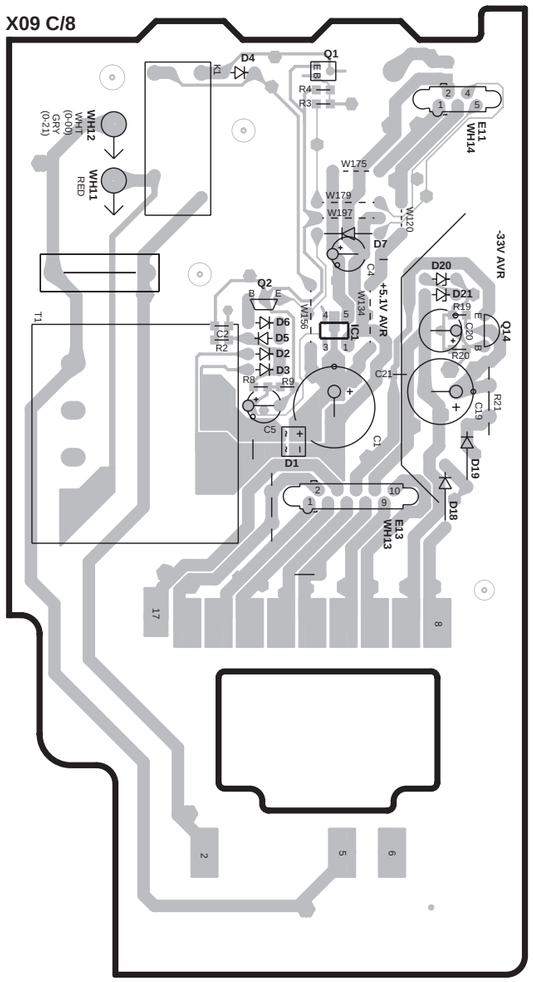
MD LOADING PWB-F2



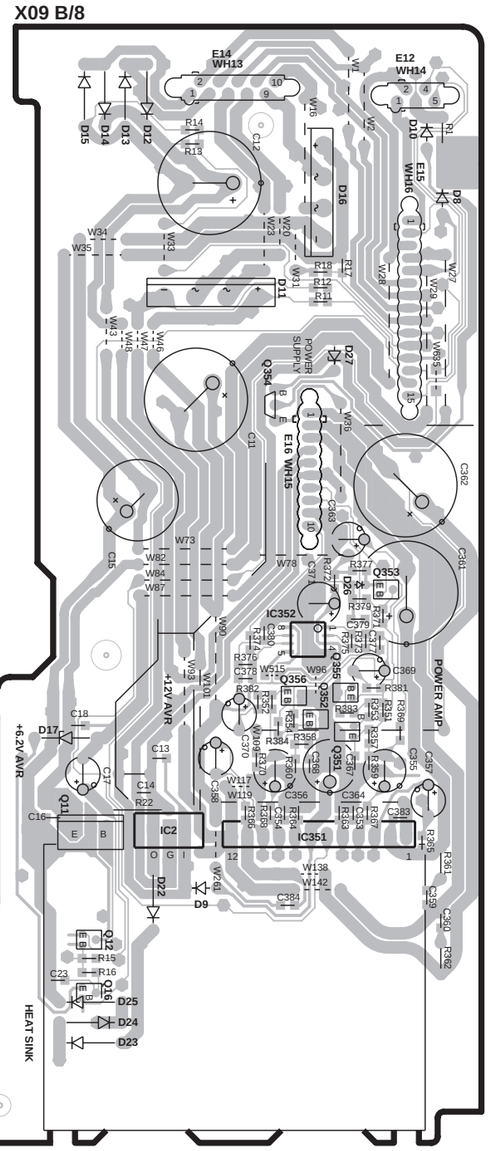
Refer to the schematic diagram for the value of resistors and capacitors.

PC BOARD (Component side view)

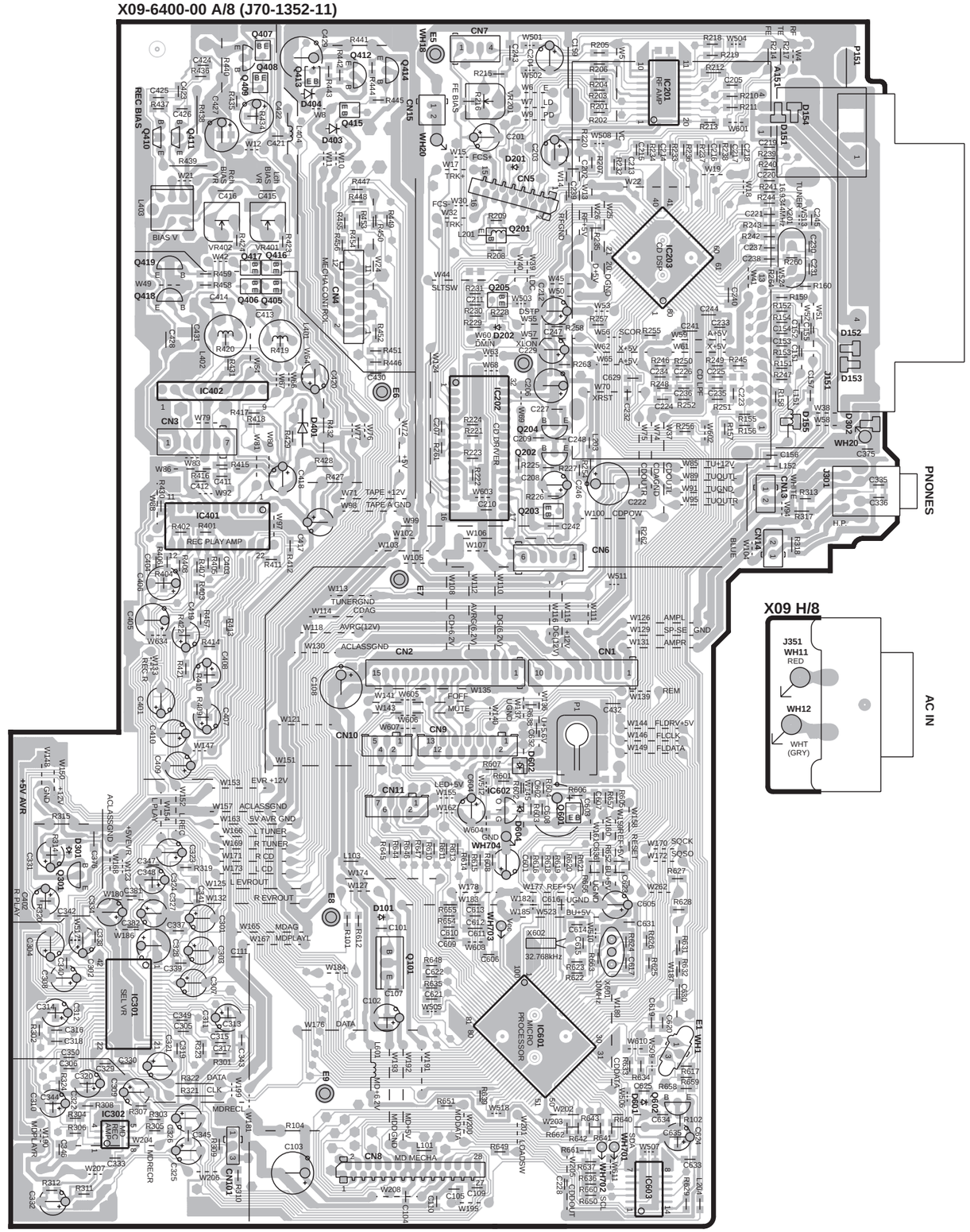
X09 C/8



X09 B/8

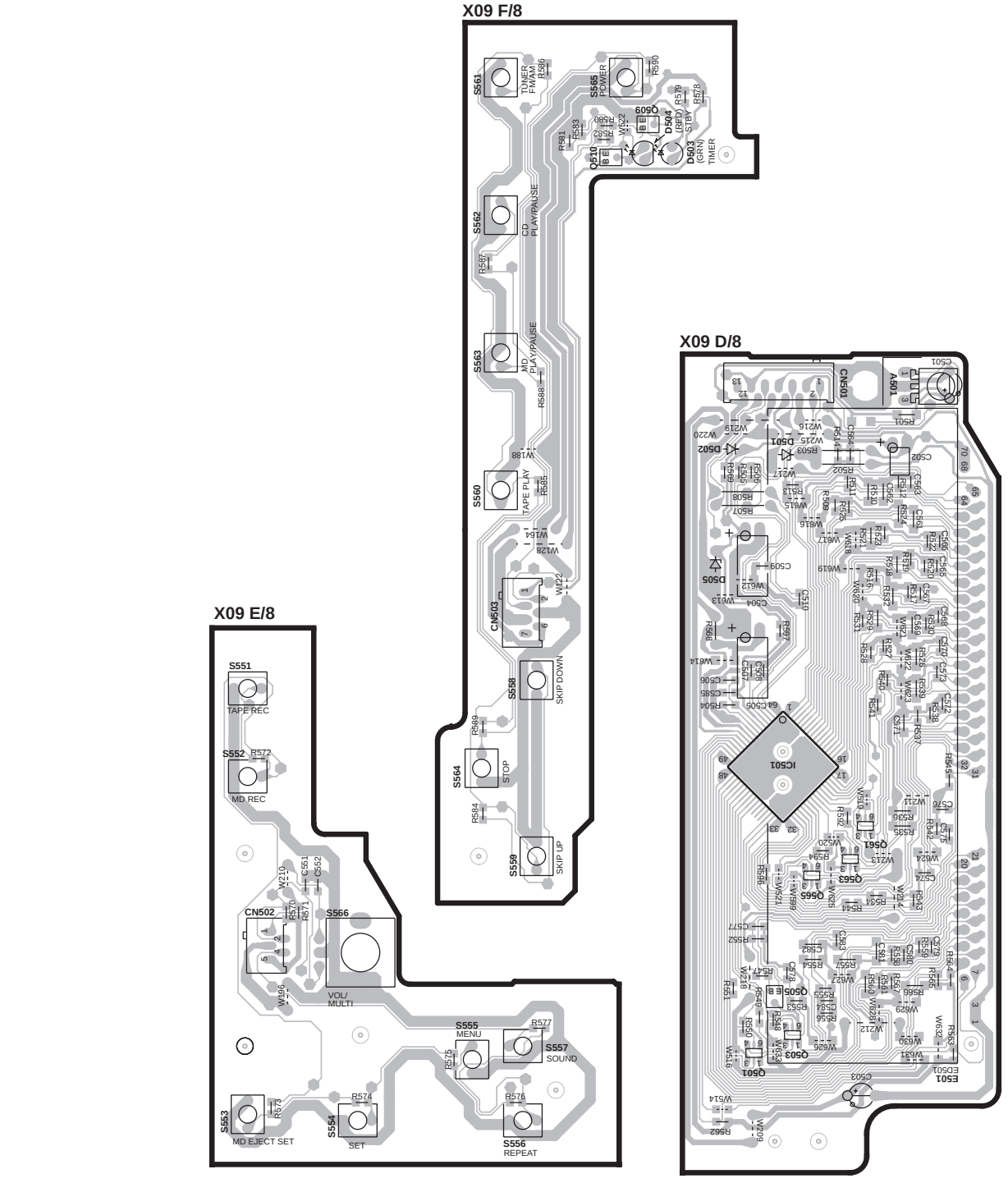


X09-6400-00 A/8 (J70-1352-11)



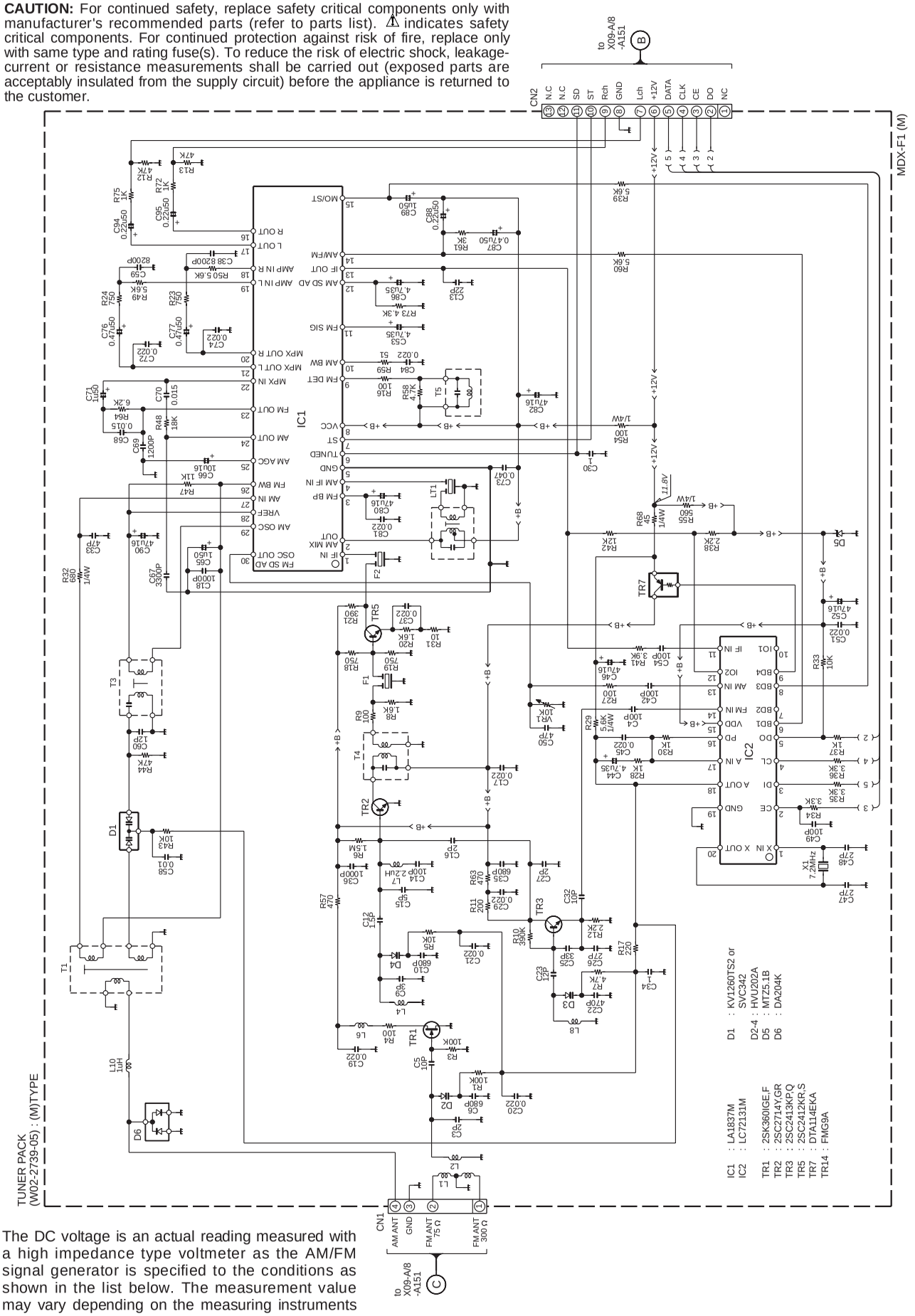
Refer to the schematic diagram for the value of resistors and capacitors.

PC BOARD (Component side view)



Refer to the schematic diagram for the value of resistors and capacitors.

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.



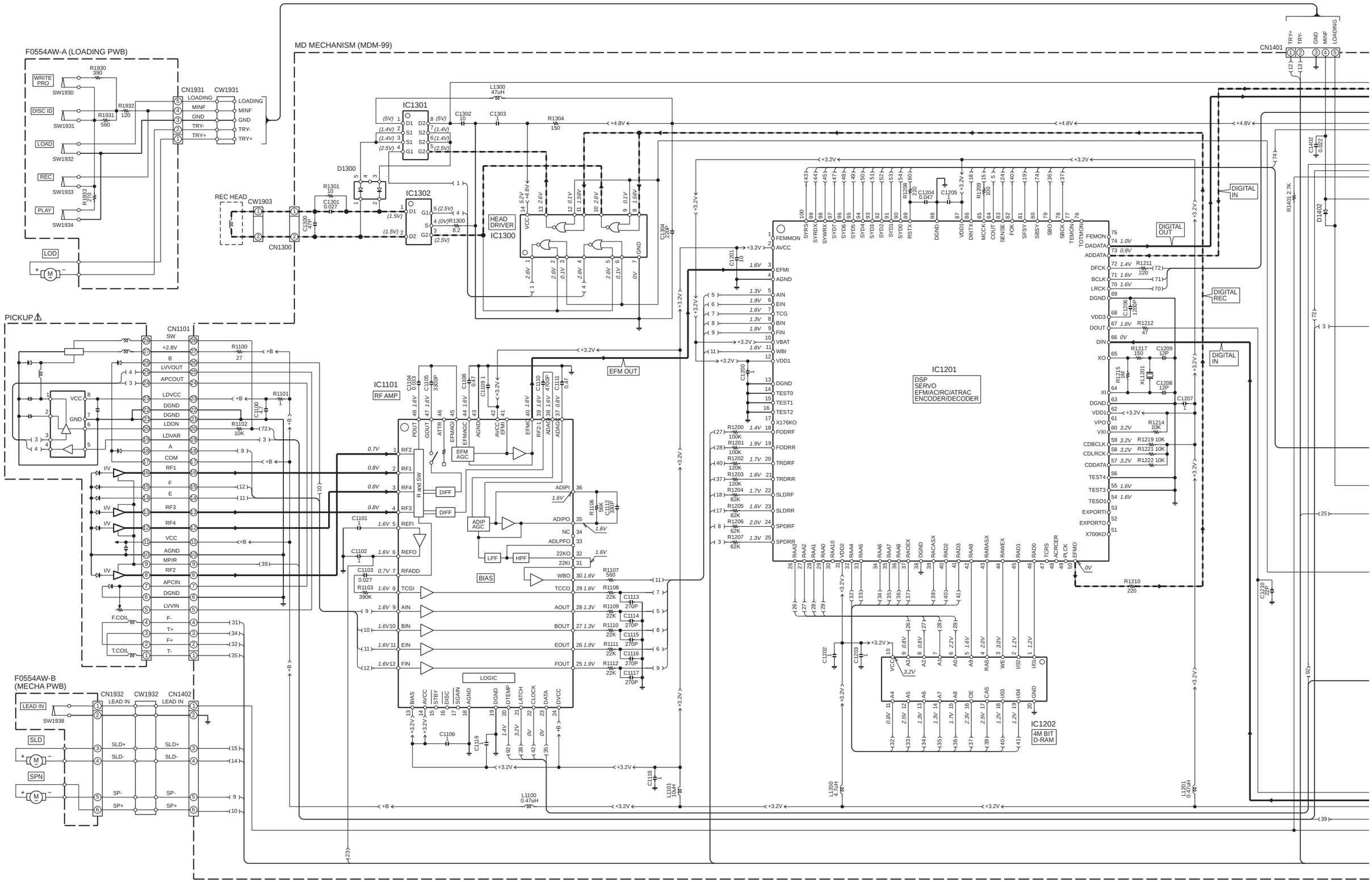
The DC voltage is an actual reading measured with a high impedance type voltmeter as the AM/FM signal generator is specified to the conditions as shown in the list below. The measurement value may vary depending on the measuring instruments used or on the product. The value shown in ( ) is actual reading measured in the AM mode.

MODE	CARRIER	MODULATION		ANT INPUT
		FREQUENCY	DEVIATION	
FM	98MHz	1kHz	STEREO 67.5kHz 7.5kHz(Pilot)	60dB
AM	1000(999)kHz	400Hz	MONO 30% MOD	60dB

Y39-3430-21

MDX-F1

KENWOOD



CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

The DC voltage is an actual reading measured with a high impedance type voltmeter. The measurement value may vary depending on the measuring instruments used or on the product. Refer to the voltage during RECORDABLE MD PLAY unless otherwise specified; The value shown in ( ) is the voltage measured at the moment of STOP. The voltage followed by (REC) refers to the value during MD RECORDING.

P Q R S T U V W X Y

MD MECHANISM (MDM-99)

IC1401 MD-MECHA u-COM

IC1701 AD/DA CONVERTER

IC1702

IC1801

IC1402 E²PROM

IC1601 MOTOR DRIVER

ANALOG OUT

ANALOG IN

+3.2 AVR

2SC4081

DTA124EUA
DTC124EUA

BA3126N

DA204U

X09-A/8
-CN8

UN5212

TA7812S

S-80840ANY

NJM431U

IC1101 : IR3R55
IC1201 : LR376484
IC1202 : IX2474AF
IC1300 : 74ACT02T
IC1301 : FTD2005
IC1302 : CPH5608
IC1401 : IX0342AW
IC1402 : 58X2402T
IC1601 : M56788F
IC1701 : UDA1347
IC1702 : NJM431U
IC1801 : XC62EP32

Q1402 : UN2113
Q1403,1701 : UN2213
Q1501,1800,1802 : UN2214
Q1700 : 2SD601AR
Q1702,1801 : 2SA1162G
Q1803,1806 : UN221N
Q1804 : 2SA1242Y
Q1805 : 2SA1314C

D1300 : SBE803
D1401 : SB00703Q
D1402 : 1SS355

DIGITAL LINE
SIGNAL LINE
GND LINE
+B LINE

MDX-F1 (1/3)

Y39-3430-21

MDX-F1

KENWOOD

CD MECHANISM ASS'Y
(D40-1660-05)

⚠ PICKUP ASS'Y (KCP3H)

MON, LD, VR1 (3.3K), R2 (5.6), C1 0.1, C2 0.1, C3 0.1, C4 0.1, C5 0.1, C6 0.1, C7 0.1, C8 0.1, C9 0.1, VCC, 1/2VCC, A, B, C, E, F

FO- TRK+ TRK- FO+ MON VR LD LD GND F B A C2 C1 E VCC 1/2 VCC

CNP1

TRAVERSE UNIT

DISC MOTOR, SLED MOTOR, SLT. SW

SPD+ SPD- SLD+ SLD- SLT.SW GND

(X09-640X-XX)

DESTINATION	ABB.	UNIT No.	A151	R639	W518
JAPAN	J	0-00	W02-2733-05	MO	YES
GENERAL MARKET	M	0-21	W02-2739-05	YES	NO

RECORDING LINE
SIGNAL LINE
GND LINE
+B LINE

(X09-640X-XX) (A/8)

CN5 FO- TRK+ TRK- FO+ MON VR LD LD GND F B A C2 C1 E VCC 1/2 VCC

CD ADJUST TERMINAL

CN7 RF VC VCC LD

CN6 SPDL+ SPDL- SLD+ SLD- SLT. SW GND

D201, L201 10uH, APC AMP, Q201, R205 150K, R206 150K, R204 47K, R203 47K, R202 47K, R201 47K, R208 4.7K, R209 10, C201 100u10, C204 100u10

IC201 (BOTTOM VIEW) CD RF AMP
NC VC VR E F VEE PD2 PD1 PD LD NC EO EI TE FE- BIAS FE RFO RFI LDON VCC
R218 15K, R219 27K, R217 100, R216 10K, R214 100, R211 8.2K, R210 3.3K, R213 47K, R215 10K, R220, C205 27P, C202, C203 100u10, VR201(B) 22K, FE-BIAS

IC202 4ch BTL DRIVER
REGULATOR T.S.D MONITOR, POWVCC, THERMAL SHUTDOWN, LEVEL SHIFT, MUTE, PREVCC, VREF, INTER-FACE, R221 2.2K, R222 1M, R223 1M, R281 39K, C207 0.047, R224 50K, R225 10K, R226 220K, R228 180K, D202, R229 6.8K

TUNER PACK A151
W02-CN2 (B), W02-CN1 (C)
PLL-DO PLL-CE PLL-CLK PLL-DATA +12V Lch GND Rch ST(STEREO) SD(TUNED) AM IN GND FM IN(75) FM IN(300)
R155 1k, R156 1k, R157 1k, R158 1k, R159 2.2k, R152 2.2k, R160 100, C151 4700P, C152 4700P, C153 330P, C154 330P, C155, L151 10uH, D151, D154, D155

5V AVR, CD POWER CONT., Q204, Q202, Q203, Q205, C206 220u10, C209 1000P, C208 0.1, C227 0.1, C242 0.1, R227 10K, R226 330, R262 100, R230 4.7K, R231 4.7K, C210 0.1, C211 0.033

IC203 (BOTTOM VIEW) DSP/DAC CD-TEXT
FRDR FFDR TRDR TFDR SRDR SFDR SSTP(SLT.SW) MDP LOCK FOK DFCT MIRR COUT
SCOR C2PO GFS XPCK XUGF WFCK XLON(MON) SPOB SPOA ATSK DVDD SCLK SENS CLOK XLAT DATA SYSM XRST SQCK SQSO
AVDD1 AOUT1 AIN1 LOUT1 AVSS1 AVSS2 LOUT2 AIN2 AOUT2 AVDD2 RMUT LMUT
LRCK PCMD BCK EMPH XVDD XATI XATO XVSS AVDD1 AOUT1 AVSS1 AVSS2 LOUT2 AIN2 AOUT2 AVDD2 RMUT LMUT
TEST1 TEST2 CE RFDC ADJO AVSS0 IGEN AVDD0 ASY0 ASY1 BIAS RFAC AVSS3 CLTV FILO FILI PCO AVDD3 DVSS DVDD DOUT
SE FE VC XTSL TES1 TEST DVSS
R232 15K, C213 220P, C214 180P, C215 0.022, R234 10K, R233 15K, C216 0.1, R238 1M, R237 100K, C217 0.01, C218 3300P, R240 3.3K, C239 0.01, C221 0.1, R241 3.3K, C237 330P, L204, C244 0.1, R243 680, R242 13K, C245 15P, C228 47P, C212 100u10, C239 0.01, C219 1500P, R239 10K, C238 0.047, C240 0.047, R245 10K, R246 2.2K, C225 270P, C226 270P, R235 4.7K, R236 4.7K, R255 47K, R256 1K, C222 0.01, R258 6.2, C243 101

IC601 (BOTTOM VIEW) u-COM
CD POWER(DC OFF), VCC(B.U.), VREF, CE, AVSS, ADP2, ADP1, ADP3, NC, KEY1, KEY2, PHOTO, LEDG, LEDR, ENC2, ENC1, FLCE, FL RST, POWER, NC
DSTP XLON LDC SCLK SENS CD CLK XLAT BYTE CNVSS XCIN XCOUT RESET XOUT VSS XIN VCC(B.U) NIN REMOCON NC SCOR XRST PLL DO SACE SACLK SADATA ST SD SQCK SQSO NC
CD CONTROL, 32.768kHz, 10MHz, CD CONTROL
X601 10MHz, X602 32.768kHz, C614 18P, C615 22P, C616 1, C617 100P, C618 47P, C619 47P, C620 47P, C630 100P, C631 0.1, C633 470P
R608 10K, C606 0.01, C605 100u10, R615 100, R614 100, R613 100, C611 0.01, C612 0.01, C613 0.01, C609 0.01, C610 0.01, R611 100, R610 100, R612 100, R647 3.3K, R646 2.2K, R644 3.3K, R645 3.3K, R648 1K, R635 1K, R655 2K, R654 2.7K, R618 3.3K, R619 3.3K, R620 1K, R623 10K, R624 1M, R628 47K, R627 47K, R631 270K, R632 270K, R638 100, R629 3.3K, R617 4.7K, R633 1K, R634 1.1K, R636 1.6K, R637 1.6K, R626 1K, R660 3.3K, R661 3.3K, R640 100, R641 100, R643 3.3K, R642 1.6K, R649 100, R639 47K, W518
FL DATA, NC, FL CLK, CD DOOR SW2(OPEN/CLOSE), K DATA, MD DATA, DSCK, CD DATA, DSTB, SDA(EPROM), SCL(EPROM), MDRST, PDOWN, MDST, SEARCH, LOAD SW, CD DOOR SW1(OPEN/CLOSE), RDS DATA, MD/NOT, F1/MICRO
MD CONTROL, DECK CONTROL
STBY AMUTE VOL DATA REC-R REC-F PACK SW CHG SW PLAY SW SOL CPWI BIAS BEAT CANCEL REC/PLAY B1/2 AB-1 AB-2 VSS A12/0/70 VCC(B.U) VOL CLK DSW3 DSW2 DSW1 DSW0 NC NC NC NC NC NC NC
IC603 VCC 1A 1Y 2A 2Y 3A 3Y GND 4A 4Y 5A 5Y 6A 6Y
R651 100, R650 100

CN10 ENC1 ENC2 A/D GND KEY1 ENC +5V
CN11 LEDR LEDG KEY2 A/D GND LED +5V NC
CN9 FL CE FL RST FLB FLA VFL VFL REF REMO-CON DRV+5V FL CLK FL DATA REM +5V GND NC
CN8 DOUT GND DIN BACKUP PDOWN RST MD-ST DSCK SEARCH

E5 E6 E7 E8 E9

(X09-) (G/8)
S601, S602, E2, C618 0.01, C628 0.01, C619 0.01, WH1, OPEN/CLOSE

CASSETTE MECHANISM
(D40-1655-05)
SOL, MTR, SOL+V PHOTO-OUT PLAY-SW +V NC NC +5V(PHOTO) GND CrO2-SW PACK-SW REC-P REC-R
R/P HD, E HD, L-PLAY L-REC GND R-REC R-PLAY GND ERASE
DOOR SW1, GND, DOOR SW2, E1

MDM-99
CN1501 1/3

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

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(X09-640X-XX) (A/8)

ANTENNA | ROD ANTENNA | MD TEST TERMINAL

IC301 SYSTEM IC

IC302 MD REC AMP +5.5dB

IC401

IC402 REC/PLAY SW

IC602

MAIN u-COM CE&RESET

RESET IC

BACK UP

RESET

5V AVR

5V AVR (MD)

BEAT CANCEL CONTROL

BEAT CANCEL

BIAS SW

BIAS ON/OFF SW

BIAS OSC

BIAS ADJ (Lch)

BIAS ADJ. (Rch)

REC/PLAY SW

SOL DRIVER

MOTOR DRIVER

SURROUND

uCOM INTERFACE

HEADPHONES

IC201	: CXA1571M
IC202	: BA5979S
IC203	: CXD2587Q
IC301	: M62498FP
IC302	: NJM4565M
IC401	: HA12219NT
IC402	: BA3126N
IC601	: M30622MC-746FP
IC602	: S-80840ANY
IC603	: TC74HCT7007AF
Q101	: 2SD2012 or 2SD2061
Q201	: 2SA1577(Q,R)
Q202,204,412,414	: 2SA1286-T11
Q203,205,405,407,413,415,416	: DTC124EUA or UN5212
Q301	: 2SC3940A(R,S)
Q406,408,417	: DTA124EUA or UN5112
Q409,602	: 2SC2003(L,K)
Q410,411	: 2SC2785(F,E) or KTC3199(Y,GR)
Q418,419	: 2SC1845(F,E)
Q601	: 2SC4081(R,S) or 2SD1819A(Q,R)
D101,301,601	: UDZ5.6B
D151-155,302	: DA204U
D201,202,604	: MA111
D401	: MTZJ5.6(B) or HZS5.6N(B2)
D403,404	: 1SS133 or HSS104A
D602	: 1SS402
A151	: ⚹

2SA1175
2SC2785

DTA124ESA
UN4112

2SA1286-T11
2SC1845
2SC2003
2SC2878
2SC3940A

2SD2061

2SD2012

2SD1819A

MDX-F1(2/3)

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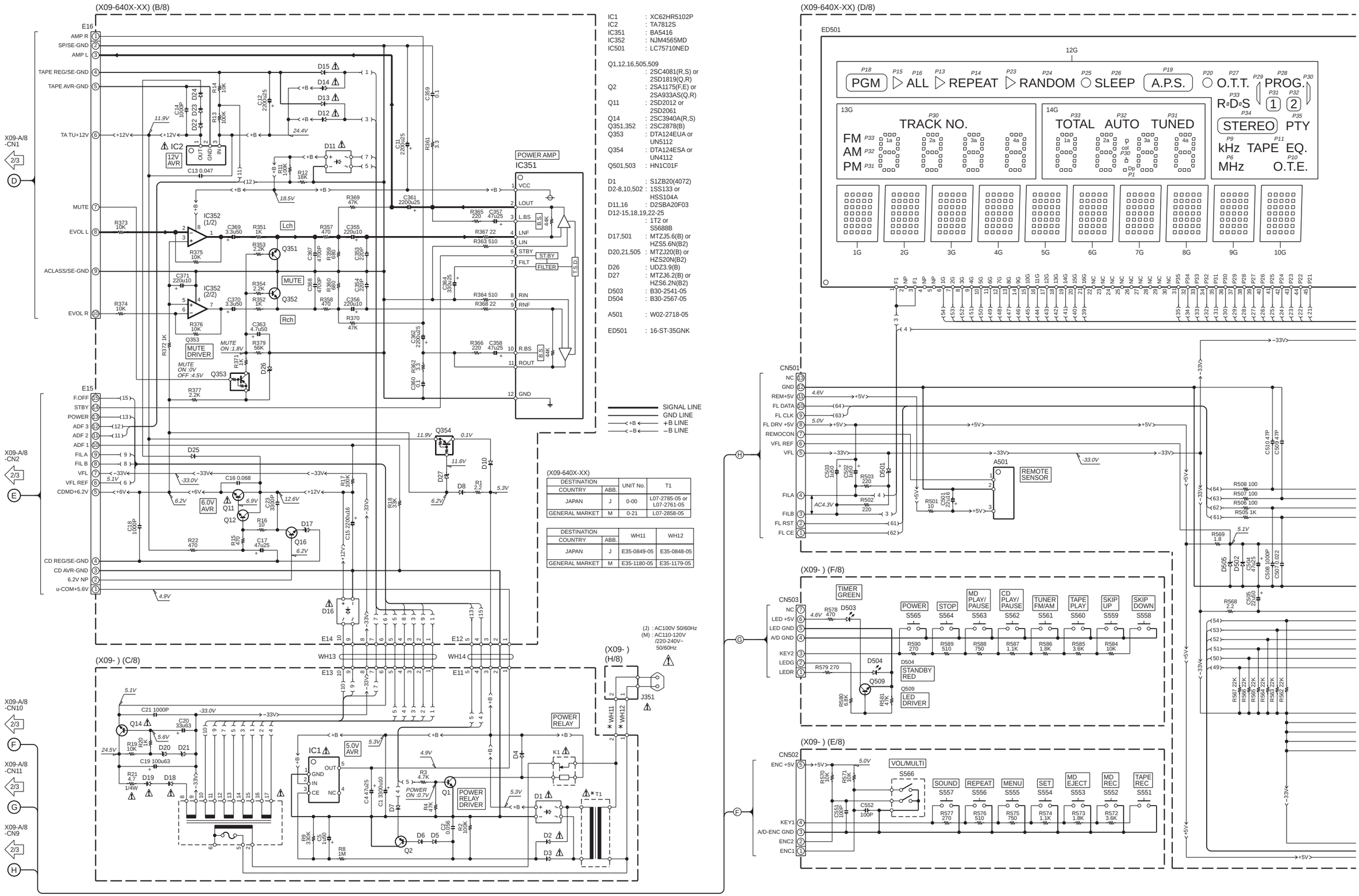
Y39-3430-21

MDX-F1

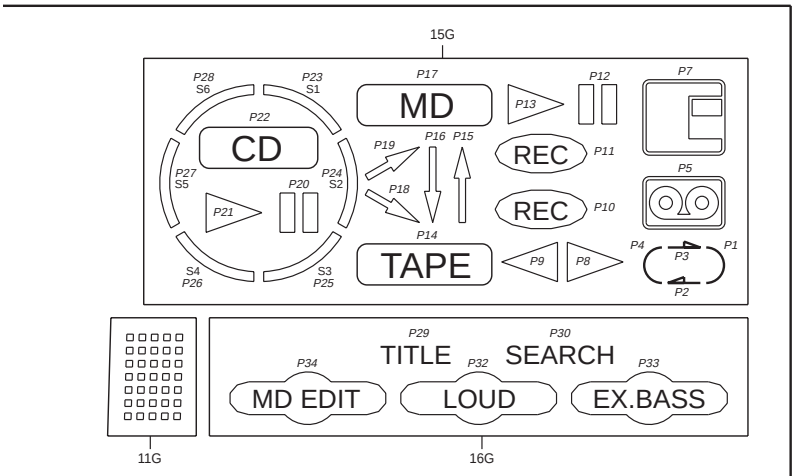
KENWOOD

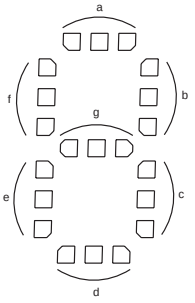


CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

The DC voltage is an actual reading measured with a high impedance type voltmeter with no signal input. The measurement value may vary depending on the measuring instruments used or on the product.

(X09-640X-XX) (D/8)





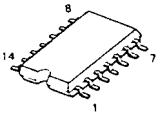
(13G,14G)

	13G,14G
P2	4d
P3	3d
P4	2d
P5	1d
P6	4c
P7	3c
P8	2c
P9	1c
P10	4e
P11	3e
P12	2e
P13	1e
P14	4g
P15	3g
P16	2g
P17	1g
P18	4b
P19	3b
P20	2b
P21	1b
P22	4f
P23	3f
P24	2f
P25	1f
P26	4a
P27	3a
P28	2a
P29	1a

1-1 P1	2-1 P2	3-1 P3	4-1 P4	5-1 P5
1-2 P6	2-2 P7	3-2 P8	4-2 P9	5-2 P10
1-3 P11	2-3 P12	3-3 P13	4-3 P14	5-3 P15
1-4 P16	2-4 P17	3-4 P18	4-4 P19	5-4 P20
1-5 P21	2-5 P22	3-5 P23	4-5 P24	5-5 P25
1-6 P26	2-6 P27	3-6 P28	4-6 P29	5-6 P30
1-7 P31	2-7 P32	3-7 P33	4-7 P34	5-7 P35

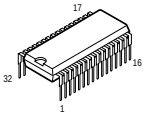
(1G-11G)

TC74HCT7007AF

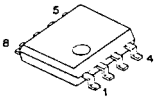


HA12219NT

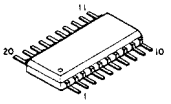
BA5979S



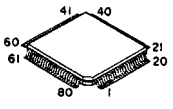
NJM4565MD



CXA1571M



CXD2587Q

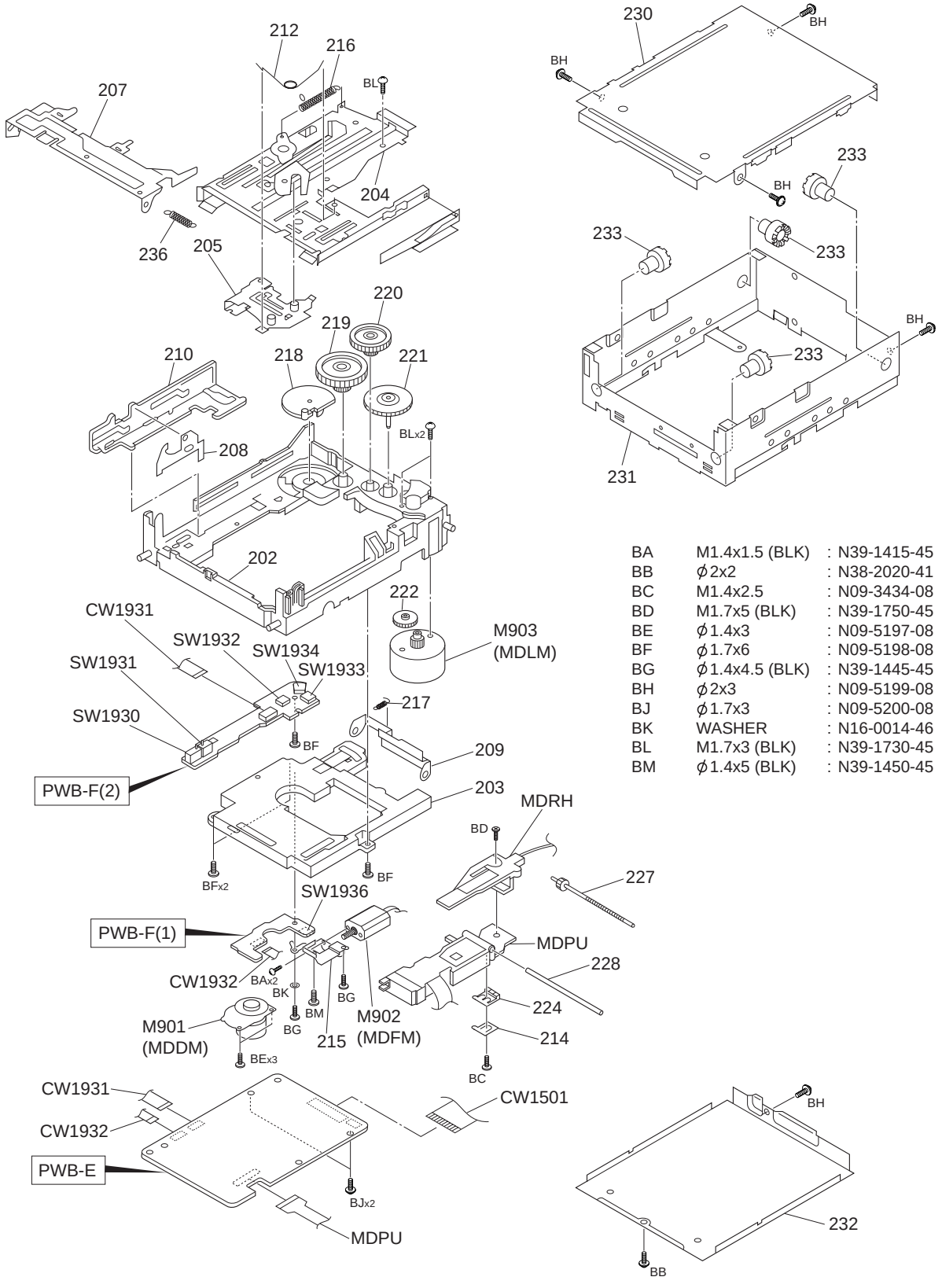


IC501
(BOTTOM VIEW)
FL DRIVER

FL GRID DRIVER

MDX-F1 (3/3)

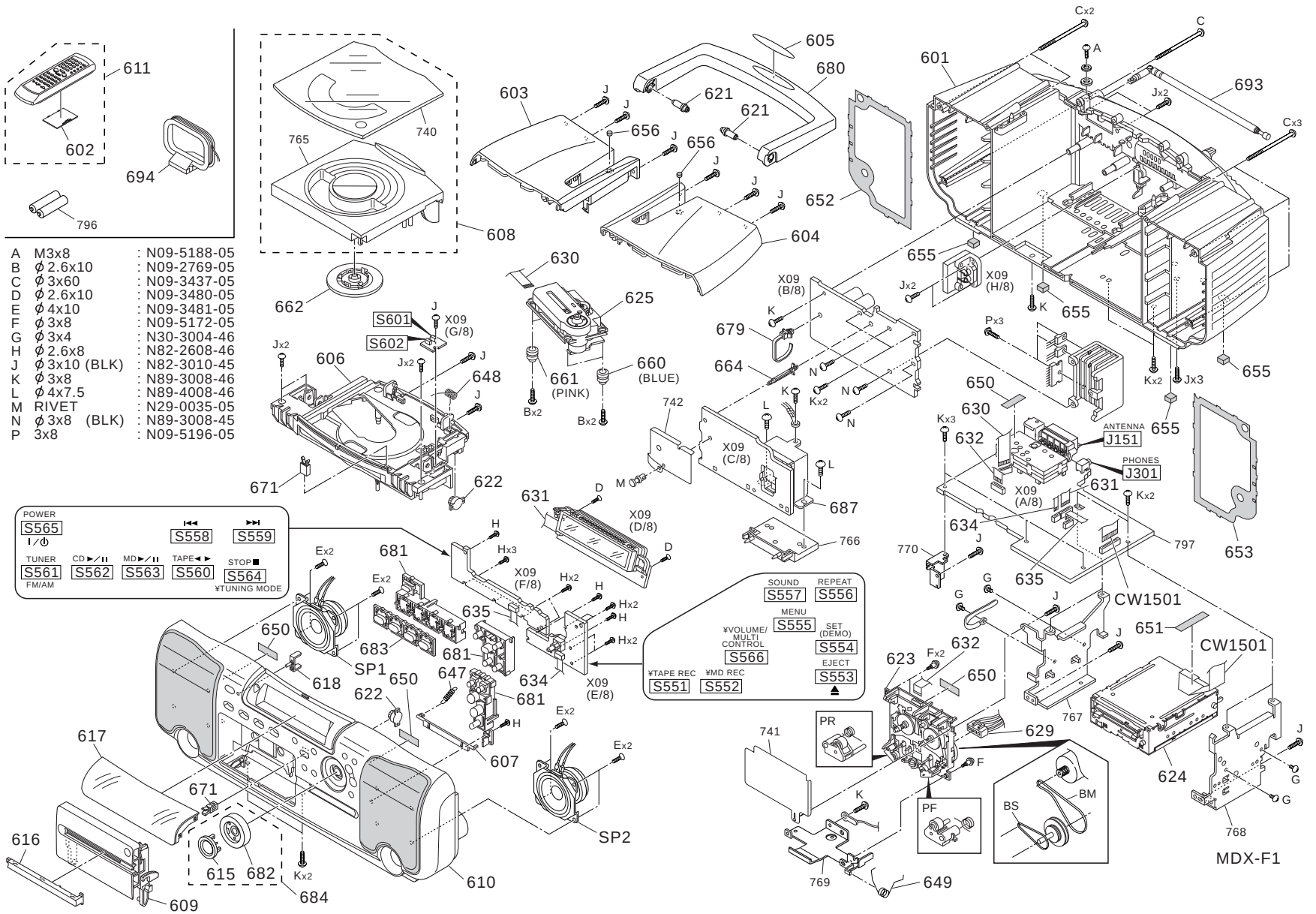
EXPLODED VIEW (MD MECHANISM)



BA	M1.4x1.5 (BLK)	: N39-1415-45
BB	ϕ2x2	: N38-2020-41
BC	M1.4x2.5	: N09-3434-08
BD	M1.7x5 (BLK)	: N39-1750-45
BE	ϕ1.4x3	: N09-5197-08
BF	ϕ1.7x6	: N09-5198-08
BG	ϕ1.4x4.5 (BLK)	: N39-1445-45
BH	ϕ2x3	: N09-5199-08
BJ	ϕ1.7x3	: N09-5200-08
BK	WASHER	: N16-0014-46
BL	M1.7x3 (BLK)	: N39-1730-45
BM	ϕ1.4x5 (BLK)	: N39-1450-45

MDM-99A

Parts with exploded numbers larger than 700 are not supplied.



Parts with exploded numbers larger than 700 are not supplied.

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Teile ohne **Parts No.** werden nicht geliefert.

❶

Ref. No	Address	New Parts	Parts No.	Description	Destination	Remarks
MDX-F1 M1: SILVER, M2: RED						
601	1E	✻	A02-2949-01	PLASTIC CABINET	M1	
601	1E	✻	A02-2950-01	PLASTIC CABINET	M2	
602	1C		A09-1151-08	BATTERY COVER		
603	1D	✻	A21-3816-02	DRESSING PANEL L	M1	
603	1D	✻	A21-3830-02	DRESSING PANEL L	M2	
604	1D	✻	A21-3817-02	DRESSING PANEL R	M1	
604	1D	✻	A21-3831-02	DRESSING PANEL R	M2	
605	1D	✻	A21-3818-04	DRESSING PANEL KENWOOD	M1	
605	1D	✻	A21-3837-04	DRESSING PANEL KENWOOD	M2	
606	1C	✻	A22-1836-01	SUB PANEL		
607	2D	✻	A29-1078-04	PANEL		
608	1D	✻	A52-0378-02	DOOR ASSY	M1	
608	1D	✻	A52-0380-02	DOOR ASSY	M2	
609	2C	✻	A53-2174-02	CASSETTE HOLDER	M1	
609	2C	✻	A53-2188-02	CASSETTE HOLDER	M2	
610	2D	✻	A60-1729-02	PANEL ASSY	M1	
610	2D	✻	A60-1803-02	PANEL ASSY	M2	
611	1C	✻	A70-1325-05	REMOTE CONTROL(RC-MDX0101)		
615	2C	✻	B07-2482-04	ESCUTCHEON		
616	2C	✻	B10-3540-04	FRONT GLASS		
617	2C	✻	B10-3541-03	FRONT GLASS		
618	2C	✻	B12-0381-04	INDICATOR		
-			B58-0966-13	CAUTION CARD (PL)		
-			B58-1643-04	CAUTION CARD (CASSETTE EJEC)		
-		✻	B60-4535-00	INSTRUCTION MANUAL		
621	1D	✻	D21-1967-04	SHAFT		
622	2C,2D		D39-0333-05	DAMPER		
623	2E	✻	D40-1655-05	MECHANISM ASSY CASSETTE		
624	2E	✻	D40-1656-05	MECHANISM ASSY MDM-99A		
625	1D	✻	D40-1660-05	MECHANISM ASSY CD		
629	2E	✻	E35-2457-05	WIRING HARNESS, 7P,HEAD,DECK		
630	1D,1E		E35-2243-05	FLAT CABLE 16P,CD		
631	2D,2E	✻	E35-2443-05	FLAT CABLE 13P DISPLAY		
632	1E,2E	✻	E35-2445-05	FLAT CABLE 12P,DECK		
634	2D,2E	✻	E35-2463-05	FLAT CABLE 5P		
635	2D,2E	✻	E35-2464-05	FLAT CABLE 7P		
647	2D	✻	G01-4194-04	EXTENSION SPRING		
648	1D	✻	G01-4195-04	TORSION COIL SPRING		
649	2E	✻	G01-4196-04	TORSION COIL SPRING		
650	2C,1E		G10-0146-04	NON-WOVEN FABRIC,30X10X0.5		
651	2E		G10-0461-04	NON-WOVEN FABRIC		
652	1D	✻	G10-0518-04	NON-WOVEN FABRIC,SP L		
653	2E	✻	G10-0519-04	NON-WOVEN FABRIC,SP R		
655	1E	✻	G11-2712-04	CUSHION FOOT		
656	1D	✻	G11-2713-04	CUSHION HANDLE		
-		✻	H10-7622-02	POLYSTYRENE FOAMED FIXTURE		
-		✻	H10-7623-02	POLYSTYRENE FOAMED FIXTURE		
-		✻	H13-0326-04	CARTON BOARD		
-		✻	H21-0367-04	PROTECTION SHEET		
-			H25-1642-04	PROTECTION BAG		
-		✻	H50-3630-04	ITEM CARTON CASE	M1	

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❷

Ref. No	Address	New Parts	Parts No.	Description	Destination	Remarks
-		✻	H50-3668-04	ITEM CARTON CASE	M2	
660	1D	✻	J02-1470-05	INSULATOR BLUE		
661	1D	✻	J02-1471-05	INSULATOR PINK		
662	1C	✻	J11-0852-03	CLAMPER ASSY		
664	1D		J19-5919-05	UNIT HOLDER		
671	2C		J52-0039-05	PUSH LATCH		
679	1D		J61-0070-05	WIRE BAND		
-			J61-0307-05	WIRE BAND		
680	1D	✻	K01-0110-02	HANDLE	M1	
680	1D	✻	K01-0117-02	HANDLE	M2	
681	2C,2D	✻	K29-7669-02	KNOB		
682	2C	✻	K29-7670-04	KNOB	M1	
682	2C	✻	K29-7759-04	KNOB	M2	
683	2C	✻	K29-7718-03	KNOB	M1	
683	2C	✻	K29-7750-03	KNOB	M2	
684	2C	✻	K29-7753-04	KNOB ASSY	M1	
684	2C	✻	K29-7755-04	KNOB ASSY	M2	
⚠ 687	2D	✻	L07-2782-05	POWER TRANSFORMER		
693	1E		T90-0828-05	ROD ANTENNA		
694	1C	✻	T90-0852-05	LOOP ANTENNA		
SP1	2C	✻	T07-0096-05	FULLRANGE L		
SP2	2D	✻	T07-0097-05	FULLRANGE R		
AUDIO (X09-6400-21)						
D503			B30-2541-05	LED(GRN3(80))		
D504			B30-2567-05	LED(RED(80) HI-BR)		
C1			CE04KW1A332M	ELECTRO 3300UF 10WV		
C2			CK73FB1H563K	CHIP C 0.056UF K		
C4			CE04KW1E470M	ELECTRO 47UF 25WV		
C5			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C11 ,12			CE04KW1E222M	ELECTRO 2200UF 25WV		
C13			CK73FB1H473K	CHIP C 0.047UF K		
C14			CK73FB1H102K	CHIP C 1000PF K		
C15			CE04KW1C222M	ELECTRO 2200UF 16WV		
C16			CK73FB1H683K	CHIP C 0.068UF K		
C17			CE04KW1E470M	ELECTRO 47UF 25WV		
C18			CK73FB1H102K	CHIP C 1000PF K		
C19			CE04DW1J101M	ELECTRO 100UF 63WV		
C20			CE04KW1J330M	ELECTRO 33UF 63WV		
C21			CK73FB1H102K	CHIP C 1000PF K		
C23			CK73FB1H332K	CHIP C 3300PF K		
C101			CK73FB1H103K	CHIP C 0.010UF K		
C102			CE04KW1E470M	ELECTRO 47UF 25WV		
C103			CE04KW1C331M	ELECTRO 330UF 16WV		
C105			CK73FB1H103K	CHIP C 0.010UF K		
C107			CK73FF1E104Z	CHIP C 0.10UF Z		
C109,110			CC73FCH1H221J	CHIP C 220PF J		
C151,152			CK73FB1H472K	CHIP C 4700PF K		
C153,154			CK73FB1H332K	CHIP C 3300PF K		
C155			CK73FF1C105Z	CHIP C 1.0UF Z		
C156			CK73FB1H103K	CHIP C 0.010UF K		
C157			CK73FB1H102K	CHIP C 1000PF K		
C201			CE04KW1A101M	ELECTRO 100UF 10WV		

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❸

Ref. No	Address	New Parts	Parts No.	Description			Destination	Remarks
C202			CK73FF1C105Z	CHIP C	1.0UF	Z		
C203,204			CE04KW1A101M	ELECTRO	100UF	10WV		
C205			CC73FCH1H270J	CHIP C	27PF	J		
C206			CE04KW1A221M	ELECTRO	220UF	10WV		
C207			CK73FB1H473K	CHIP C	0.047UF	K		
C208			CE04KW1H100M	ELECTRO	10UF	50WV		
C209			CK73FB1H102K	CHIP C	1000PF	K		
C210			CK73FF1E104Z	CHIP C	0.10UF	Z		
C211			CK73FB1H333K	CHIP C	0.033UF	K		
C212			CE04KW1A101M	ELECTRO	100UF	10WV		
C213			CC73FCH1H221J	CHIP C	220PF	J		
C214			CC73FCH1H181J	CHIP C	180PF	J		
C215			CK73FB1H223K	CHIP C	0.022UF	K		
C216			CK73FB1C104K	CHIP C	0.10UF	K		
C217			CK73FB1H103K	CHIP C	0.010UF	K		
C218			CK73FB1H332K	CHIP C	3300PF	K		
C219			CK73FB1H152K	CHIP C	1500PF	K		
C220			CK73FB1H473K	CHIP C	0.047UF	K		
C221			CK73FF1C105Z	CHIP C	1.0UF	Z		
C222			CE04RW0J331M	ELECTRO	330UF	6.3WV		
C223,224			CK73FB1H152K	CHIP C	1500PF	K		
C225,226			CK73FB1H271K	CHIP C	270PF	K		
C227			CK73FF1E104Z	CHIP C	0.10UF	Z		
C228			CC73FCH1H470J	CHIP C	47PF	J		
C229			CE04KW1E470M	ELECTRO	47UF	25WV		
C230,231			CC73FCH1H470J	CHIP C	47PF	J		
C232			CK73FB1H103K	CHIP C	0.010UF	K		
C235,236			CC73FCH1H470J	CHIP C	47PF	J		
C237			CC73FCH1H331J	CHIP C	330PF	J		
C238			CK73FB1H102K	CHIP C	1000PF	K		
C239			CK73EB1H103K	CHIP C	0.010UF	K		
C240,241			CK73EF1C105Z	CHIP C	1.0UF	Z		
C242			CK73FF1E104Z	CHIP C	0.10UF	Z		
C243			CK73EB1H103K	CHIP C	0.010UF	K		
C244			CK73EF1C105Z	CHIP C	1.0UF	Z		
C245			CC73FCH1H150J	CHIP C	15PF	J		
C301,302			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C303,304			CE04KW1H4R7M	ELECTRO	4.7UF	50WV		
C305,306			CK73FB1C104K	CHIP C	0.10UF	K		
C307-310			CE04KW1H4R7M	ELECTRO	4.7UF	50WV		
C311,312			CE04KW1H100M	ELECTRO	10UF	50WV		
C313,314			CK73FB1C104K	CHIP C	0.10UF	K		
C315-318			CK73FB1C154K	CHIP C	0.15UF	K		
C319,320			CK73FB1H472K	CHIP C	4700PF	K		
C321,322			CE04KW1H2R2M	ELECTRO	2.2UF	50WV		
C323-326			CE04KW1H4R7M	ELECTRO	4.7UF	50WV		
C327			CE04KW1H100M	ELECTRO	10UF	50WV		
C328			C90-3816-05	ELECTRO	10UF	35WV		
C329,330			CC73FCH1H221J	CHIP C	220PF	J		
C331			CE04KW1H100M	ELECTRO	10UF	50WV		
C332			CE04KW1E470M	ELECTRO	47UF	25WV		
C333			CK73FB1H103K	CHIP C	0.010UF	K		
C334			CE04KW1E470M	ELECTRO	47UF	25WV		
C335,336			CC73FCH1H102J	CHIP C	1000PF	J		
C337-340			CC73FCH1H221J	CHIP C	220PF	J		

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❹

Ref. No	Address	New Parts	Parts No.	Description			Destination	Remarks
C341-346			CC73FCH1H470J	CHIP C	47PF	J		
C347,348			CC73FCH1H221J	CHIP C	220PF	J		
C349,350			CK73FB1C104K	CHIP C	0.10UF	K		
C353,354			CC73FCH1H221J	CHIP C	220PF	J		
C355,356			CE04KW1A221M	ELECTRO	220UF	10WV		
C357,358			CE04KW1E470M	ELECTRO	47UF	25WV		
C359,360			CK73FF1E104Z	CHIP C	0.10UF	Z		
C361,362			CE04KW1E222M	ELECTRO	2200UF	25WV		
C363			CE04KW1H4R7M	ELECTRO	4.7UF	50WV		
C364			CE04DW1E331M	ELECTRO	330UF	25WV		
C367,368			CK73FB1H472K	CHIP C	4700PF	K		
C369,370			CE04KW1H3R3M	ELECTRO	3.3UF	50WV		
C371			CE04KW1A221M	ELECTRO	220UF	10WV		
C375			CK73FB1H102K	CHIP C	1000PF	K		
C376			CK73EB1H473K	CHIP C	0.047UF	K		
C401,402			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C403,404			CK73FB1H103K	CHIP C	0.010UF	K		
C405,406			CE04KW1A221M	ELECTRO	220UF	10WV		
C407,408			CE04KW1H2R2M	ELECTRO	2.2UF	50WV		
C409,410			CE04KW1H100M	ELECTRO	10UF	50WV		
C411,412			CK73FB1H561K	CHIP C	560PF	K		
C413-416			CC45FSL1H221J	CERAMIC	220PF	J		
C417			CE04KW1E470M	ELECTRO	47UF	25WV		
C418			CE04KW1A101M	ELECTRO	100UF	10WV		
C419,420			CE04KW1H100M	ELECTRO	10UF	50WV		
C421			CK73FB1C104K	CHIP C	0.10UF	K		
C422			CE04KW1H330M	ELECTRO	33UF	50WV		
C424,425			CK73FB1H103K	CHIP C	0.010UF	K		
C426			CK73FB1H153KTA	CHIP C	0.015UF	K		
C427			CE04KW1E101M	ELECTRO	100UF	25WV		
C428			CQ93HP2A682J	MYLAR	6800PF	J		
C429			CE04KW1C331M	ELECTRO	330UF	16WV		
C430			CK73FB1H103K	CHIP C	0.010UF	K		
C431			CK45FB2H471K	CERAMIC	470PF	K		
C432			CK73EB1H103K	CHIP C	0.010UF	K		
C501			CE04RW1C220M	ELECTRO	22UF		16WV	
C502		✻	C90-3895-05	ELECTRO	1UF	50WV		
C503			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C504		✻	C90-3896-05	ELECTRO	47UF	25WV		
C505		✻	C90-3897-05	ELECTRO	22UF	50WV		
C506			CC73FCH1H680J	CHIP C	68PF	J		
C507			CK73FB1H223K	CHIP C	0.022UF	K		
C508			CK73FB1H102K	CHIP C	1000PF	K		
C509,510			CC73FCH1H470J	CHIP C	47PF	J		
C551,552			CC73FCH1H101J	CHIP C	100PF	J		
C566			CC73FCH1H101J	CHIP C	100PF	J		
C568			CC73FCH1H101J	CHIP C	100PF	J		
C577			CC73FCH1H101J	CHIP C	100PF	J		
C578			CC73FCH1H221J	CHIP C	220PF	J		
C582			CC73ESL1H101J	CHIP C	100PF	J		
C583			CC73FCH1H221J	CHIP C	220PF	J		
C584			CC73FCH1H471J	CHIP C	470PF	J		
C601			CE04KW1H2R2M	ELECTRO	2.2UF	50WV		
C602			CK73FF1C105Z	CHIP C	1.0UF	Z		
C603			CE04DW0J102M	ELECTRO	1000UF	6.3WV		

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C604,605			CE04KW1A101M	ELECTRO	100UF	10WV		
C606-610			CK73FB1H103K	CHIP C	0.010UF	K		
C611			CK73EB1H103K	CHIP C	0.010UF	K		
C612,613			CK73FB1H103K	CHIP C	0.010UF	K		
C614			CC73FCH1H180J	CHIP C	18PF	J		
C615			CC73FCH1H220J	CHIP C	22PF	J		
C616			CK73FF1C105Z	CHIP C	1.0UF	Z		
C617			CK73FB1H102K	CHIP C	1000PF	K		
C618			CK73FB1H103K	CHIP C	0.010UF	K		
C619-622			CC73FCH1H470J	CHIP C	47PF	J		
C624			CE04KW1E470M	ELECTRO	47UF	25WV		
C625			CK73FB1H103K	CHIP C	0.010UF	K		
C628			CK73FB1H103K	CHIP C	0.010UF	K		
C629			CC73FCH1H101J	CHIP C	100PF	J		
C630			CC73ESL1H101J	CHIP C	100PF	J		
C631			CK73FF1E104Z	CHIP C	0.10UF	Z		
C632			CK73FB1H103K	CHIP C	0.010UF	K		
C633			CK73FB1H471K	CHIP C	470PF	K		
C634			CK73FF1C105Z	CHIP C	1.0UF	Z		
CN1			E40-3254-05	PIN ASSY				
CN2			E40-3259-05	PIN ASSY				
CN3			E40-3251-05	PIN ASSY				
CN4		✻	E40-8609-05	FLAT CABLE CONNECTOR				
CN5			E40-8328-05	FLAT CABLE CONNECTOR				
CN6			E40-3250-05	PIN ASSY				
CN7			E40-3248-05	PIN ASSY				
CN8			E40-8326-05	FLAT CABLE CONNECTOR				
CN9		✻	E40-8480-05	FLAT CABLE CONNECTOR				
CN10		✻	E40-8476-05	FLAT CABLE CONNECTOR				
CN11		✻	E40-8477-05	FLAT CABLE CONNECTOR				
CN13			E40-3237-05	PIN ASSY				
CN14		✻	E40-8587-05	PIN ASSY				
CN15			E40-3246-05	PIN ASSY				
CN101			E40-4872-05	PIN ASSY				
CN501		✻	E40-8500-05	FLAT CABLE CONNECTOR				
CN502		✻	E40-8495-05	FLAT CABLE CONNECTOR				
CN503		✻	E40-8497-05	FLAT CABLE CONNECTOR				
J151			E70-0051-05	LOCK TERMINAL BOARD				
J301			E11-0399-05	MINIATURE PHONE JACK(7P)				
⚠ J351		✻	E03-0367-05	AC INLET				
E5 -9			J11-0808-05	WIRE CLAMPER				
E501			J19-6038-03	HOLDER				
L101			L92-0089-05	CHIP FERRITE				
L103			L92-0089-05	CHIP FERRITE				
L151			L40-1001-17	SMALL FIXED INDUCTOR(10UH,K)				
L152			L79-1216-05	LINE FILTER				
L201			L40-1001-17	SMALL FIXED INDUCTOR(10UH,K)				
L203			L79-1216-05	LINE FILTER				
L204		✻	L92-0507-05	CHIP FERRITE				
L401,402			L40-1035-20	SMALL FIXED INDUCTOR(10MH,J)				
L403		✻	L32-1023-05	BIAS OSCILLATING COIL				
L404			L40-1001-17	SMALL FIXED INDUCTOR(10UH,K)				
L601			L40-1001-17	SMALL FIXED INDUCTOR(10UH,K)				

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⚠ T1		✻	L07-2858-05	POWER TRANSFORMER					
X201			L77-2190-05	CRYSTAL RESONATOR(16.9344MHZ)					
X601			L78-0294-05	RESONATOR (10.000M)					
X602			L77-2173-05	CRYSTAL RESONATOR(32.768KHZ)					
R2			RK73FB2A104J	CHIP R	100K	J	1/10W		
R3			RK73FB2A472J	CHIP R	4.7K	J	1/10W		
R4			RK73FB2A473J	CHIP R	47K	J	1/10W		
R8			RK73FB2A105J	CHIP R	1.0M	J	1/10W		
R9			RK73FB2A334J	CHIP R	330K	J	1/10W		
R11			RK73FB2A104J	CHIP R	100K	J	1/10W		
R12			RK73FB2A183J	CHIP R	18K	J	1/10W		
R13			RK73FB2A104J	CHIP R	100K	J	1/10W		
R14			RK73FB2A103J	CHIP R	10K	J	1/10W		
R15			RK73FB2A471J	CHIP R	470	J	1/10W		
R16			RK73FB2A100J	CHIP R	10	J	1/10W		
R17			RK73FB2A104J	CHIP R	100K	J	1/10W		
R18			RK73FB2A333J	CHIP R	33K	J	1/10W		
R19			RK73FB2A103J	CHIP R	10K	J	1/10W		
R20			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
⚠ R21			RD14NB2E4R7J	RD	4.7	J	1/4W		
R101			RK73FB2A471J	CHIP R	470	J	1/10W		
R102			RK73FB2A100J	CHIP R	10	J	1/10W		
⚠ R104			RD14NB2E3R3J	RD	3.3	J	1/4W		
R151,152			RK73FB2A222J	CHIP R	2.2K	J	1/10W		
R153,154			RK73FB2A103J	CHIP R	10K	J	1/10W		
R155-159			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R160			RK73FB2A101J	CHIP R	100	J	1/10W		
R201-204			RK73FB2A473J	CHIP R	47K	J	1/10W		
R205,206			RK73FB2A154J	CHIP R	150K	J	1/10W		
R207			RK73FB2A1R0J	CHIP R	1.0	J	1/10W		
R208			RK73FB2A473J	CHIP R	47K	J	1/10W		
R209			RK73FB2A100J	CHIP R	10	J	1/10W		
R210			RK73FB2A332J	CHIP R	3.3K	J	1/10W		
R211			RK73FB2A822J	CHIP R	8.2K	J	1/10W		
R212			RK73EB2B472J	CHIP R	4.7K	J	1/8W		
R213			RK73FB2A473J	CHIP R	47K	J	1/10W		
R215,216			RK73FB2A103J	CHIP R	10K	J	1/10W		
R218			RK73FB2A153J	CHIP R	15K	J	1/10W		
R219			RK73FB2A273J	CHIP R	27K	J	1/10W		
R220			RK73FB2A2R2J	CHIP R	2.2	J	1/10W		
R221			RK73FB2A224J	CHIP R	220K	J	1/10W		
R222,223			RK73FB2A105J	CHIP R	1.0M	J	1/10W		
R224			RK73FB2A224J	CHIP R	220K	J	1/10W		
R225			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R226			RK73FB2A331J	CHIP R	330	J	1/10W		
R227			RK73FB2A103J	CHIP R	10K	J	1/10W		
R228			RK73FB2A184J	CHIP R	180K	J	1/10W		
R229			RK73FB2A682J	CHIP R	6.8K	J	1/10W		
R230,231			RK73FB2A472J	CHIP R	4.7K	J	1/10W		
R232,233			RK73FB2A153J	CHIP R	15K	J	1/10W		
R234			RK73FB2A104J	CHIP R	100K	J	1/10W		
R235			RK73FB2A472J	CHIP R	4.7K	J	1/10W		
R236			RK73FB2A333J	CHIP R	33K	J	1/10W		
R237			RK73FB2A104J	CHIP R	100K	J	1/10W		

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R238			RK73FB2A105J	CHIP R	1.0M	J	1/10W		
R239			RK73FB2A103J	CHIP R	10K	J	1/10W		
R240,241			RK73FB2A332J	CHIP R	3.3K	J	1/10W		
R242			RK73FB2A681J	CHIP R	680	J	1/10W		
R243			RK73FB2A152J	CHIP R	1.5K	J	1/10W		
R244			RK73FB2A1R0J	CHIP R	1.0	J	1/10W		
R245,246			RK73FB2A103J	CHIP R	10K	J	1/10W		
R247-250			RK73FB2A822J	CHIP R	8.2K	J	1/10W		
R251,252			RK73FB2A100J	CHIP R	10	J	1/10W		
R254			RK73FB2A390J	CHIP R	39	J	1/10W		
R255			RK73FB2A473J	CHIP R	47K	J	1/10W		
R256			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R257			RK73FB2A473J	CHIP R	47K	J	1/10W		
R258			RK73FB2A8R2J	CHIP R	8.2	J	1/10W		
R260			RK73FB2A105J	CHIP R	1.0M	J	1/10W		
R261			RK73FB2A393J	CHIP R	39K	J	1/10W		
R262,263			RK73FB2A101J	CHIP R	100	J	1/10W		
R301,302			RK73FB2A682J	CHIP R	6.8K	J	1/10W		
R303,304			RK73FB2A123J	CHIP R	12K	J	1/10W		
R305,306			RK73FB2A103J	CHIP R	10K	J	1/10W		
R307,308			RK73FB2A104J	CHIP R	100K	J	1/10W		
R309,310			RK73FB2A332J	CHIP R	3.3K	J	1/10W		
R311,312			RK73FB2A103J	CHIP R	10K	J	1/10W		
R313			RK73FB2A100J	CHIP R	10	J	1/10W		
R314			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
⚠ R315			RD14NB2E4R7J	RD	4.7	J	1/4W		
R317,318			RK73EB2B241J	CHIP R	240	J	1/8W		
R319,320			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R323,324			RK73FB2A682J	CHIP R	6.8K	J	1/10W		
R351,352			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R353,354			RK73FB2A222J	CHIP R	2.2K	J	1/10W		
R357,358			RK73FB2A471J	CHIP R	470	J	1/10W		
R359,360			RK73FB2A681J	CHIP R	680	J	1/10W		
R363,364			RK73FB2A511J	CHIP R	510	J	1/10W		
R365,366			RK73FB2A221J	CHIP R	220	J	1/10W		
R367,368			RK73FB2A220J	CHIP R	22	J	1/10W		
R369,370			RK73FB2A473J	CHIP R	47K	J	1/10W		
R371,372			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R373-376			RK73FB2A103J	CHIP R	10K	J	1/10W		
R377			RK73FB2A222J	CHIP R	2.2K	J	1/10W		
R379			RK73FB2A563J	CHIP R	56K	J	1/10W		
R401,402			RK73FB2A334J	CHIP R	330K	J	1/10W		
R403,404			RK73FB2A270J	CHIP R	27	J	1/10W		
R405,406			RK73FB2A223J	CHIP R	22K	J	1/10W		
R407,408			RK73FB2A153J	CHIP R	15K	J	1/10W		
R409,410			RK73FB2A222J	CHIP R	2.2K	J	1/10W		
R411,412			RK73FB2A682J	CHIP R	6.8K	J	1/10W		
R413,414			RK73FB2A272J	CHIP R	2.7K	J	1/10W		
R415,416			RK73FB2A154J	CHIP R	150K	J	1/10W		
R417,418			RK73FB2A103J	CHIP R	10K	J	1/10W		
R419,420			RK73FB2A153J	CHIP R	15K	J	1/10W		
R421			RK73FB2A822J	CHIP R	8.2K	J	1/10W		
R422			RK73FB2A392J	CHIP R	3.9K	J	1/10W		
R423,424			RK73FB2A473J	CHIP R	47K	J	1/10W		
⚠ R427			RD14NB2E330J	RD	33	J	1/4W		

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R429			RK73FB2A100J	CHIP R	10	J	1/10W		
R430			RK73FB2A223J	CHIP R	22K	J	1/10W		
R431			RK73FB2A103J	CHIP R	10K	J	1/10W		
⚠ R432			RD14NB2E100J	RD	10	J	1/4W		
R434			RK73FB2A821J	CHIP R	820	J	1/10W		
R435			RK73FB2A622J	CHIP R	6.2K	J	1/10W		
R436,437			RK73FB2A333J	CHIP R	33K	J	1/10W		
⚠ R440			RD14NB2E100J	RD	10	J	1/4W		
⚠ R441			RD14NB2E4R7J	RD	4.7	J	1/4W		
R442			RK73FB2A473J	CHIP R	47K	J	1/10W		
R443			RK73FB2A472J	CHIP R	4.7K	J	1/10W		
R444			RK73FB2A473J	CHIP R	47K	J	1/10W		
R445			RK73FB2A222J	CHIP R	2.2K	J	1/10W		
R446			RK73FB2A683J	CHIP R	68K	J	1/10W		
R447-451			RK73FB2A472J	CHIP R	4.7K	J	1/10W		
R452-456			RK73FB2A101J	CHIP R	100	J	1/10W		
R457			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R458,459			RK73FB2A562J	CHIP R	5.6K	J	1/10W		
R501			RK73EB2B100J	CHIP R	10	J	1/8W		
R504			RK73FB2A103J	CHIP R	10K	J	1/10W		
R505			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R506			RK73FB2A101J	CHIP R	100	J	1/10W		
R509			RK73FB2A473J	CHIP R	47K	J	1/10W		
R510			RK73EB2B473J	CHIP R	47K	J	1/8W		
R511-514			RK73FB2A473J	CHIP R	47K	J	1/10W		
R516,517			RK73FB2A473J	CHIP R	47K	J	1/10W		
R518			RK73EB2B473J	CHIP R	47K	J	1/8W		
R519,520			RK73FB2A473J	CHIP R	47K	J	1/10W		
R521			RK73EB2B473J	CHIP R	47K	J	1/8W		
R522,523			RK73FB2A473J	CHIP R	47K	J	1/10W		
R524			RK73EB2B473J	CHIP R	47K	J	1/8W		
R525			RK73FB2A473J	CHIP R	47K	J	1/10W		
R526			RK73EB2B473J	CHIP R	47K	J	1/8W		
R527,528			RK73FB2A473J	CHIP R	47K	J	1/10W		
R529			RK73EB2B473J	CHIP R	47K	J	1/8W		
R530,531			RK73FB2A473J	CHIP R	47K	J	1/10W		
R532			RK73EB2B473J	CHIP R	47K	J	1/8W		
R534			RK73FB2A473J	CHIP R	47K	J	1/10W		
R535,536			RK73EB2B473J	CHIP R	47K	J	1/8W		
R537,538			RK73FB2A473J	CHIP R	47K	J	1/10W		
R539			RK73EB2B473J	CHIP R	47K	J	1/8W		
R540-545			RK73FB2A473J	CHIP R	47K	J	1/10W		
R547-551			RK73FB2A102J	CHIP R	1.0K	J	1/10W		
R552,553			RK73FB2A223J	CHIP R	22K	J	1/10W		
R554			RK73EB2B223J	CHIP R	22K	J	1/8W		
R555,556			RK73FB2A223J	CHIP R	22K	J	1/10W		
R557			RK73EB2B223J	CHIP R	22K	J	1/8W		
R558,559			RK73FB2A223J	CHIP R	22K	J	1/10W		
R560			RK73EB2B223J	CHIP R	22K	J	1/8W		
R561-565			RK73FB2A223J	CHIP R	22K	J	1/10W		
R566			RK73EB2B223J	CHIP R	22K	J	1/8W		
R567			RK73FB2A223J	CHIP R	22K	J	1/10W		
R569			RK73FB2A1R8J	CHIP R	1.8	J	1/10W		
R570,571			RK73FB2A103J	CHIP R	10K	J	1/10W		
R572			RK73FB2A362J	CHIP R	3.6K	J	1/10W		

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Ref. No	Address	New Parts	Parts No.	Description	Destination	Remarks
R573			RK73FB2A182J	CHIP R 1.8K J 1/10W		
R574			RK73FB2A112J	CHIP R 1.1K J 1/10W		
R575			RK73FB2A751J	CHIP R 750 J 1/10W		
R576			RK73FB2A511J	CHIP R 510 J 1/10W		
R577			RK73FB2A271J	CHIP R 270 J 1/10W		
R578			RK73FB2A471J	CHIP R 470 J 1/10W		
R579			RK73FB2A271J	CHIP R 270 J 1/10W		
R580			RK73FB2A682J	CHIP R 6.8K J 1/10W		
R581			RK73FB2A473J	CHIP R 47K J 1/10W		
R584			RK73FB2A103J	CHIP R 10K J 1/10W		
R585			RK73FB2A362J	CHIP R 3.6K J 1/10W		
R586			RK73FB2A182J	CHIP R 1.8K J 1/10W		
R587			RK73FB2A112J	CHIP R 1.1K J 1/10W		
R588			RK73FB2A751J	CHIP R 750 J 1/10W		
R589			RK73FB2A511J	CHIP R 510 J 1/10W		
R590			RK73FB2A271J	CHIP R 270 J 1/10W		
R601			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R602			RK73FB2A103J	CHIP R 10K J 1/10W		
R603			RK73FB2A104J	CHIP R 100K J 1/10W		
R604			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R605			RK73FB2A103J	CHIP R 10K J 1/10W		
R606			RK73FB2A101J	CHIP R 100 J 1/10W		
R607			RK73FB2A1R0J	CHIP R 1.0 J 1/10W		
R608			RK73FB2A103J	CHIP R 10K J 1/10W		
R610-615			RK73FB2A101J	CHIP R 100 J 1/10W		
R616			RK73FB2A332J	CHIP R 3.3K J 1/10W		
R617			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R618,619			RK73FB2A332J	CHIP R 3.3K J 1/10W		
R620			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R621			RK73FB2A332J	CHIP R 3.3K J 1/10W		
R622			RK73FB2A475J	CHIP R 4.7M J 1/10W		
R623			RK73FB2A104J	CHIP R 100K J 1/10W		
R624			RK73FB2A105J	CHIP R 1.0M J 1/10W		
R625			RK73FB2A332J	CHIP R 3.3K J 1/10W		
R626			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R627,628			RK73FB2A473J	CHIP R 47K J 1/10W		
R629			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R631,632			RK73FB2A271J	CHIP R 270 J 1/10W		
R633-635			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R636,637			RK73FB2A162J	CHIP R 1.6K J 1/10W		
R638			RK73FB2A101J	CHIP R 100 J 1/10W		
R639			RK73FB2A473J	CHIP R 47K J 1/10W		
R640,641			RK73FB2A101J	CHIP R 100 J 1/10W		
R642			RK73FB2A162J	CHIP R 1.6K J 1/10W		
R643-645			RK73FB2A332J	CHIP R 3.3K J 1/10W		
R646			RK73FB2A222J	CHIP R 2.2K J 1/10W		
R647			RK73FB2A332J	CHIP R 3.3K J 1/10W		
R648			RK73FB2A102J	CHIP R 1.0K J 1/10W		
R649-652			RK73FB2A101J	CHIP R 100 J 1/10W		
R654,655			RK73FB2A272J	CHIP R 2.7K J 1/10W		
R656,657			RK73FB2A2R2J	CHIP R 2.2 J 1/10W		
R658			RK73FB2A471J	CHIP R 470 J 1/10W		
R659			RK73FB2A472J	CHIP R 4.7K J 1/10W		
R660-662			RK73FB2A332J	CHIP R 3.3K J 1/10W		
VR201			R32-0038-05	SEMI FIXED VARIABLE RESISTOR		

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Ref. No	Address	New Parts	Parts No.	Description	Destination	Remarks
VR401,402			R32-0042-05	SEMI FIXED VARIABLE RESISTOR		
W501-517			R92-0670-05	CHIP R 0 OHM		
W519-522			R92-0670-05	CHIP R 0 OHM		
W601-624			R92-0679-05	CHIP R 0 OHM		
W626-635			R92-0679-05	CHIP R 0 OHM		
⚠ K1			S76-0099-05	MAGNETIC RELAY		
⚠ K1		✻	S76-0102-05	MAGNETIC RELAY		
S551-565			S70-0031-05	TACT SWITCH		
S601,602			S64-0042-05	LEVER SWITCH		
S566		✻	T99-0629-05	ROTARY ENCODER		
⚠ D1			S1ZB20(4072)	DIODE		
⚠ D2 -8			HSS104A	DIODE		
⚠ D2 -8			1SS133	DIODE		
D10			HSS104A	DIODE		
D10			1SS133	DIODE		
⚠ D11			D2SBA20F03	DIODE		
⚠ D12 -15			S5688B	DIODE		
⚠ D12 -15			1T2	DIODE		
⚠ D16			D2SBA20F03	DIODE		
D17			HZS5.6N(B2)	ZENER DIODE		
D17			MTZJ5.6(B)	ZENER DIODE		
⚠ D18 ,19			S5688B	DIODE		
⚠ D18 ,19			1T2	DIODE		
D20 ,21			HZS20N(B2)	ZENER DIODE		
D20 ,21			MTZJ20(B)	ZENER DIODE		
D22 -25			S5688B	DIODE		
D22 -25			1T2	DIODE		
D26			UDZ3.9B	ZENER DIODE		
D27			HZS6.2N(B2)	ZENER DIODE		
D27			MTZJ6.2(B)	ZENER DIODE		
D101			UDZ5.6B	ZENER DIODE		
D151-155			DA204U	DIODE		
D201,202			MA111	DIODE		
D301			UDZ5.6B	ZENER DIODE		
D302			DA204U	DIODE		
D401			HZS5.6N(B2)	ZENER DIODE		
D401			MTZJ5.6(B)	ZENER DIODE		
D403,404			HSS104A	DIODE		
D403,404			1SS133	DIODE		
D501			HZS5.6N(B2)	ZENER DIODE		
D501			MTZJ5.6(B)	ZENER DIODE		
D502			HSS104A	DIODE		
D502			1SS133	DIODE		
D505			HZS20N(B2)	ZENER DIODE		
D505			MTZJ20(B)	ZENER DIODE		
D601			UDZ5.6B	ZENER DIODE		
D602			1SS402	DIODE		
D604			MA111	DIODE		
ED501		✻	16-ST-35GNK	FLUORESCENT INDICATOR TUBE		
⚠ IC1		✻	XC62HR5102P	ANALOGUE IC		
⚠ IC2			TA7812S	ANALOGUE IC		
IC201			CXA1571M	ANALOGUE IC		
IC202			BA5979S	ANALOGUE IC		
IC203			CXD2587Q	MOS-IC		

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⑪

Ref. No	Address	New Parts	Parts No.	Description	Destination	Remarks
IC301		✻	M62498FP	ANALOGUE IC		
IC302			NJM4565MD	IC(OP AMP X2)		
IC351			BA5416	ANALOGUE IC		
IC352			NJM4565MD	IC(OP AMP X2)		
IC401			HA12219NT	ANALOGUE IC		
IC402			BA3126N	ANALOGUE IC		
IC501			LC75710NED	MOS-IC		
IC601		✻	M30622MC-746FP	MI-COM IC		
IC602			S-80840ANY	ANALOGUE IC		
IC603			TC74HCT7007AF	MOS-IC		
Q1			2SC4081(R,S)	TRANSISTOR		
Q1			2SD1819A(Q,R)	TRANSISTOR		
Q2			2SA1175(F,E)	TRANSISTOR		
Q2			2SA933AS(Q,R)	TRANSISTOR		
⚠ Q11			2SD2012	TRANSISTOR		
⚠ Q11			2SD2061	TRANSISTOR		
Q12			2SC4081(R,S)	TRANSISTOR		
Q12			2SD1819A(Q,R)	TRANSISTOR		
⚠ Q14			2SC3940A(R,S)	TRANSISTOR		
Q16			2SC4081(R,S)	TRANSISTOR		
Q16			2SD1819A(Q,R)	TRANSISTOR		
⚠ Q101			2SD2012	TRANSISTOR		
⚠ Q101			2SD2061	TRANSISTOR		
Q201			2SA1577(Q,R)	TRANSISTOR		
Q202			2SA1286-T11	TRANSISTOR		
Q203			DTC124EUA	DIGITAL TRANSISTOR		
Q203			UN5212	DIGITAL TRANSISTOR		
Q204			2SA1286-T11	TRANSISTOR		
Q205			DTC124EUA	DIGITAL TRANSISTOR		
Q205			UN5212	DIGITAL TRANSISTOR		
⚠ Q301			2SC3940A(R,S)	TRANSISTOR		
Q351,352			2SC2878(B)	TRANSISTOR		
Q353			DTA124EUA	DIGITAL TRANSISTOR		
Q353			UN5112	DIGITAL TRANSISTOR		
Q354			DTA124ESA	DIGITAL TRANSISTOR		
Q354			UN4112	DIGITAL TRANSISTOR		
Q405			DTC124EUA	DIGITAL TRANSISTOR		
Q405			UN5212	DIGITAL TRANSISTOR		
Q406			DTA124EUA	DIGITAL TRANSISTOR		
Q406			UN5112	DIGITAL TRANSISTOR		
Q407			DTC124EUA	DIGITAL TRANSISTOR		
Q407			UN5212	DIGITAL TRANSISTOR		
Q408			DTA124EUA	DIGITAL TRANSISTOR		
Q408			UN5112	DIGITAL TRANSISTOR		
⚠ Q409			2SC2003(L,K)	TRANSISTOR		
Q410,411			KTC3199(Y,GR)	TRANSISTOR		
Q410,411			2SC2785(F,E)	TRANSISTOR		
⚠ Q412			2SA1286-T11	TRANSISTOR		
Q413			DTC124EUA	DIGITAL TRANSISTOR		
Q413			UN5212	DIGITAL TRANSISTOR		
⚠ Q414			2SA1286-T11	TRANSISTOR		
Q415,416			DTC124EUA	DIGITAL TRANSISTOR		
Q415,416			UN5212	DIGITAL TRANSISTOR		
Q417			DTA124EUA	DIGITAL TRANSISTOR		
Q417			UN5112	DIGITAL TRANSISTOR		

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⑫

Ref. No	Address	New Parts	Parts No.	Description			Destination	Remarks
Q418,419			2SC1845(F,E)	TRANSISTOR				
Q501			HN1C01F	DUAL TRANSISTOR				
Q503			HN1C01F	DUAL TRANSISTOR				
Q505			2SC4081(R,S)	TRANSISTOR				
Q505			2SD1819A(Q,R)	TRANSISTOR				
Q509			2SC4081(R,S)	TRANSISTOR				
Q509			2SD1819A(Q,R)	TRANSISTOR				
Q601			2SC4081(R,S)	TRANSISTOR				
Q601			2SD1819A(Q,R)	TRANSISTOR				
⚠ Q602			2SC2003(L,K)	TRANSISTOR				
A151		✻	W02-2739-05	TUNER ASSY				
A501		✻	W02-2718-05	ELECTRIC CIRCUIT MODULE				
MD PCB								
C1100			C92-0171-08	CHIP-C	4.7UF	K		
C1101			C93-0033-08	CERAMIC	1UF	K		
C1102			CK73FF1C105Z	CHIP C	1.0UF	Z		
C1103			CK73FB1H273K	CHIP C	0.027UF	K		
C1104			CK73FB1H333K	CHIP C	0.033UF	K		
C1105			CK73GB1H332K	CHIP C	3300PF	K		
C1106			C93-0033-08	CERAMIC	1UF	K		
C1107			CK73GB1C333K	CHIP C	0.033UF	K		
C1108			CK73FB1C474K	CHIP C	0.47UF	K		
C1109			C93-0033-08	CERAMIC	1UF	K		
C1110			CK73FB1H472K	CHIP C	4700PF	K		
C1111			CK73FB1C474K	CHIP C	0.47UF	K		
C1112			C93-0044-08	CERAMIC	330PF	J		
C1113-117			C93-0034-08	CERAMIC	270PF	J		
C1118			CK73FF1C105Z	CHIP C	1.0UF	Z		
C1119			C93-0033-08	CERAMIC	1UF	K		
C1200			CK73FF1C105Z	CHIP C	1.0UF	Z		
C1201			C92-0172-08	CHIP-C	10UF	K		
C1202,203			CK73FF1C105Z	CHIP C	1.0UF	Z		
C1204			CK73GB1C473K	CHIP C	0.047UF	K		
C1205			CK73FF1C105Z	CHIP C	1.0UF	Z		
C1206			CK73GB1H122K	CHIP C	1200PF	K		
C1207			CK73FF1C105Z	CHIP C	1.0UF	Z		
C1208,209			CC73GCH1H120J	CHIP C	12PF	J		
C1210			CC73GCH1H220J	CHIP C	22PF	J		
C1300			CC73GCH1H470J	CHIP C	47PF	J		
C1301			CK73GB1C273K	CHIP C	0.027UF	K		
C1302			C92-0172-08	CHIP-C	10UF	K		
C1303			CK73FF1C105Z	CHIP C	1.0UF	Z		
C1304			CC73FCH1H221J	CHIP C	220PF	J		
C1402			CK73GB1C223K	CHIP C	0.022UF	K		
C1403			CK73GF1E104Z	CHIP C	0.10UF	Z		
C1404			CK73GB1C473K	CHIP C	0.047UF	K		
C1405,406			CK73GB1H681K	CHIP C	680PF	K		
C1407			CK73GB1C473K	CHIP C	0.047UF	K		
C1409			CK73FF1C105Z	CHIP C	1.0UF	Z		
C1411			CK73GB1C223K	CHIP C	0.022UF	K		
C1501			CK73FF1C105Z	CHIP C	1.0UF	Z		
C1503			CK73EB1C334K	CHIP C	0.33UF	K		
C1505			CK73GB1C473K	CHIP C	0.047UF	K		

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Ref. No	Address	New Parts	Parts No.	Description			Destination	Remarks
C1506			CC73GCH1H101J	CHIP C	100PF	J		
C1507			CK73GB1C473K	CHIP C	0.047UF	K		
C1509			CC73GCH1H101J	CHIP C	100PF	J		
C1510			CC73GCH1H221J	CHIP C	220PF	J		
C1512			CC73GCH1H221J	CHIP C	220PF	J		
C1601-604			CC73GSL1H821J	CHIP C	820PF	J		
C1606			C92-0172-08	CHIP-C	10UF	K		
C1607			CK73FF1C105Z	CHIP C	1.0UF	Z		
C1610			C92-0171-08	CHIP-C	4.7UF	K		
C1611,612			CK73GB1H562K	CHIP C	5600PF	K		
C1613			CK73GB1E153K	CHIP C	0.015UF	K		
C1615			CK73GB1E153K	CHIP C	0.015UF	K		
C1616			C92-0151-08	ELECTRO	100UF	10WV		
C1619			C93-0044-08	CERAMIC	330PF	J		
C1655			CK73GB1E153K	CHIP C	0.015UF	K		
C1700,701			C92-0162-08	ELECTRO	47UF	4WV		
C1702			CK73GB1H102K	CHIP C	1000PF	K		
C1703			CK73GF1E104Z	CHIP C	0.10UF	Z		
C1704			C92-0162-08	ELECTRO	47UF	4WV		
C1705			CK73GF1E104Z	CHIP C	0.10UF	Z		
C1706			CK73FF1H103Z	CHIP C	0.010UF	Z		
C1707			CK73FF1C105Z	CHIP C	1.0UF	Z		
C1708,709			CK73FF1H103Z	CHIP C	0.010UF	Z		
C1710			C92-0173-08	ELECTRO	10UF	16WV		
C1711			C92-0162-08	ELECTRO	47UF	4WV		
C1712			C92-0173-08	ELECTRO	10UF	16WV		
C1713			CK73FF1H103Z	CHIP C	0.010UF	Z		
C1714			CK73FF1C105Z	CHIP C	1.0UF	Z		
C1715			CK73FB1C104K	CHIP C	0.10UF	K		
C1716			C92-0162-08	ELECTRO	47UF	4WV		
C1741			CC73GSL1H821J	CHIP C	820PF	J		
C1750			CC73GSL1H821J	CHIP C	820PF	J		
C1800			C92-0174-08	ELECTRO	220UF	4WV		
C1801,802			C92-0172-08	CHIP-C	10UF	K		
C1803			C92-0151-08	ELECTRO	100UF	10WV		
C1804			CK73EF1C225Z	CHIP C	2.2UF	Z		
C1805			CK73FF1C105Z	CHIP C	1.0UF	Z		
CN1101		✻	E40-8618-08	FLAT CABLE CONNECTOR,28P				
CN1300		✻	E40-8619-08	PIN ASSY	2P			
CN1401			E40-8211-08	FLAT CABLE CONNECTOR,5P				
CN1402		✻	E40-8620-08	FLAT CABLE CONNECTOR,6P				
CN1501			E40-8371-08	FLAT CABLE CONNECTOR,28P				
CN1931			E40-8211-08	FLAT CABLE CONNECTOR				
CN1932		✻	E40-8617-08	FLAT CABLE CONNECTOR				
PCB-E	3A	✻	J70-1414-08	PC BOARD				
L1100			L90-0100-08	COIL				
L1101			L90-0099-08	COIL				
L1200			L90-0301-08	COIL				
L1201			L90-0100-08	COIL				
L1300			L90-0322-08	COIL				
L1501			L90-0303-08	COIL				
L1502			L90-0301-08	COIL				
L1600			L90-0303-08	COIL				

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L1701,702			L90-0099-08	COIL					
LX1201			L77-2224-08	CRYSTAL RESONATOR					
R1100			RK73EB2B270J	CHIP R	27	J	1/8W		
R1101			RK73GB1J1R0J	CHIP R	1.0	J	1/16W		
R1102			RK73GB1J103J	CHIP R	10K	J	1/16W		
R1103			RK73GB1J394J	CHIP R	390K	J	1/16W		
R1105			RK73GB1J122J	CHIP R	1.2K	J	1/16W		
R1106			RK73GB1J563J	CHIP R	56K	J	1/16W		
R1107			RK73GB1J561J	CHIP R	560	J	1/16W		
R1108-112			RK73GB1J223J	CHIP R	22K	J	1/16W		
R1200,201		✻	R92-1947-08	CHIP R	100K	F	1/16W		
R1202,203		✻	R92-1948-08	CHIP R	120K	F	1/16W		
R1204,205			RK73GB1J823J	CHIP R	82K	J	1/16W		
R1206,207			RK73GB1J623J	CHIP R	62K	J	1/16W		
R1208			RK73GB1J221J	CHIP R	220	J	1/16W		
R1209			RK73GB1J101J	CHIP R	100	J	1/16W		
R1210,211			RK73GB1J221J	CHIP R	220	J	1/16W		
R1212			RK73GB1J470J	CHIP R	47	J	1/16W		
R1214			RK73GB1J103J	CHIP R	10K	J	1/16W		
R1215			RK73GB1J105J	CHIP R	1.0M	J	1/16W		
R1217			RK73GB1J151J	CHIP R	150	J	1/16W		
R1219			RK73GB1J103J	CHIP R	10K	J	1/16W		
R1221,222			RK73GB1J103J	CHIP R	10K	J	1/16W		
R1300			RK73FB2A8R2J	CHIP R	8.2	J	1/10W		
R1301			RK73GB1J100J	CHIP R	10	J	1/16W		
R1304			RK73FB2A151J	CHIP R	150	J	1/10W		
R1401			RK73GB1J272J	CHIP R	2.7K	J	1/16W		
R1403			RK73GB1J471J	CHIP R	470	J	1/16W		
R1405			RK73GB1J104J	CHIP R	100K	J	1/16W		
R1406			RK73GB1J103J	CHIP R	10K	J	1/16W		
R1407,408			RK73GB1J332J	CHIP R	3.3K	J	1/16W		
R1409			R92-1823-08	JUMPER R	0	J	1/16W		
R1414			RK73GB1J224J	CHIP R	220K	J	1/16W		
R1415			RK73GB1J102J	CHIP R	1.0K	J	1/16W		
R1417,418			RK73GB1J102J	CHIP R	1.0K	J	1/16W		
R1420			RK73GB1J102J	CHIP R	1.0K	J	1/16W		
R1424			RK73GB1J473J	CHIP R	47K	J	1/16W		
R1430			RK73GB1J103J	CHIP R	10K	J	1/16W		
R1435			RK73GB1J103J	CHIP R	10K	J	1/16W		
R1441			RK73GB1J473J	CHIP R	47K	J	1/16W		
R1443			RK73GB1J102J	CHIP R	1.0K	J	1/16W		
R1444			RK73GB1J103J	CHIP R	10K	J	1/16W		
R1460,461			RK73GB1J103J	CHIP R	10K	J	1/16W		
R1462			R92-1823-08	JUMPER R	0	J	1/16W		
R1463			RK73GB1J103J	CHIP R	10K	J	1/16W		
R1510			RK73GB1J102J	CHIP R	1.0K	J	1/16W		
R1511			RK73GB1J822J	CHIP R	8.2K	J	1/16W		
R1512			RK73FB2A470J	CHIP R	47	J	1/10W		
R1513			RK73GB1J822J	CHIP R	8.2K	J	1/16W		
R1515,516			RK73GB1J182J	CHIP R	1.8K	J	1/16W		
R1517,518			RK73GB1J470J	CHIP R	47	J	1/16W		
R1520			RK73GB1J473J	CHIP R	47K	J	1/16W		
R1521			RK73GB1J121J	CHIP R	120	J	1/16W		
R1523			RK73GB1J473J	CHIP R	47K	J	1/16W		

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⑮

Ref. No	Address	New Parts	Parts No.	Description				Destination	Remarks
R1524,525			R92-1824-08	JUMPER R	0	J	1/10W		
R1526			RK73GB1J682J	CHIP R	6.8K	J	1/16W		
R1527			RK73GB1J473J	CHIP R	47K	J	1/16W		
R1528			R92-1824-08	JUMPER R	0	J	1/10W		
R1529			RK73GB1J221J	CHIP R	220	J	1/16W		
R1530			R92-1823-08	JUMPER R	0	J	1/16W		
R1532			RK73GB1J332J	CHIP R	3.3K	J	1/16W		
R1533-536			RK73GB1J102J	CHIP R	1.0K	J	1/16W		
R1537,538			RK73GB1J221J	CHIP R	220	J	1/16W		
R1539			RK73GB1J121J	CHIP R	120	J	1/16W		
R1540			R92-1824-08	JUMPER R	0	J	1/10W		
R1600,601			RK73GB1J682J	CHIP R	6.8K	J	1/16W		
R1605,606		✻	R92-1949-08	CHIP R	10K	F	1/16W		
R1612		✻	R92-1950-08	CHIP R	150K	F	1/16W		
R1614		✻	R92-1947-08	CHIP R	100K	F	1/16W		
R1616,617			RK73GB1J103J	CHIP R	10K	J	1/16W		
R1618			RK73GB1J153J	CHIP R	15K	J	1/16W		
R1620			RK73GB1J153J	CHIP R	15K	J	1/16W		
R1621			RK73GB1J682J	CHIP R	6.8K	J	1/16W		
R1622,623			RK73GB1J223J	CHIP R	22K	J	1/16W		
R1624			RK73GB1J682J	CHIP R	6.8K	J	1/16W		
R1701			RK73GB1J393J	CHIP R	39K	J	1/16W		
R1702			RK73GB1J303J	CHIP R	30K	J	1/16W		
R1703		✻	R92-1951-08	CHIP R	1K	F	1/16W		
R1704			RK73GB1J332J	CHIP R	3.3K	J	1/16W		
R1705			RK73GB1J821J	CHIP R	820	J	1/16W		
R1707			RK73GB1J105J	CHIP R	1.0M	J	1/16W		
R1708			RK73GB1J102J	CHIP R	1.0K	J	1/16W		
R1710			RK73GB1J684J	CHIP R	680K	J	1/16W		
R1711			RK73FB2A120J	CHIP R	12	J	1/10W		
R1712			RK73GB1J273J	CHIP R	27K	J	1/16W		
⚠ R1714			RK73FB2A120J	CHIP R	12	J	1/10W		
R1716			RK73GB1J104J	CHIP R	100K	J	1/16W		
R1801			RK73GB1J271J	CHIP R	270	J	1/16W		
R1802		✻	R92-1952-08		56K	F	1/16W		
R1803		✻	R92-1953-08	CHIP R	33K	F	1/16W		
R1804			RK73GB1J391J	CHIP R	390	J	1/16W		
R1805			RK73GB1J271J	CHIP R	270	J	1/16W		
⚠ R1806			RK73EB2B1R0J	CHIP R	1.0	J	1/8W		
R1807			RK73GB1J273J	CHIP R	27K	J	1/16W		
R1808			RK73GB1J182J	CHIP R	1.8K	J	1/16W		
⚠ R1809			RK73EB2B1R0J	CHIP R	1.0	J	1/8W		
⚠ R1811			RK73EB2B1R0J	CHIP R	1.0	J	1/8W		
R1930			RK73FB2A391J	CHIP R	390	J	1/10W		
R1931			RK73FB2A561J	CHIP R	560	J	1/10W		
R1932			RK73FB2A121J	CHIP R	120	J	1/10W		
R1933			RK73FB2A271J	CHIP R	270	J	1/10W		
SW1930		✻	S68-0126-08	PUSH SWITCH					
SW1931		✻	S68-0127-08	PUSH SWITCH					
SW1932-34		✻	S64-0049-08	LEVER SWITCH					
SW1936		✻	S64-0050-08	LEVER SWITCH					
D1300			SBE803	DIODE					
D1401			SB00703Q	DIODE					
D1402			1SS355	DIODE					

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IC1101			IR3R55	IC		
IC1201			LR376484	IC		
IC1202			IX2474AF	IC		
IC1300			74ACT02T	IC		
IC1301			FTD2005	IC		
IC1302			CPH5608	IC		
IC1401		✻	IX0342AW	IC		
IC1402		✻	58X2402T	IC		
IC1601		✻	M56788F	IC		
IC1701		✻	UDA1347	IC		
IC1702			NJM431U	IC(REGULATOR)		
IC1801			XC62EP32	IC		
Q1402			UN2113	TRANSISTOR		
Q1403			UN2213	TRANSISTOR		
Q1501			UN2214	TRANSISTOR		
⚠ Q1700		✻	U2SD601AR	TRANSISTOR		
Q1701			UN2213	TRANSISTOR		
⚠ Q1702			2SA1162G	TRANSISTOR		
Q1800			UN2214	TRANSISTOR		
Q1801			2SA1162G	TRANSISTOR		
Q1802			UN2214	TRANSISTOR		
Q1803		✻	UN221N	TRANSISTOR		
⚠ Q1804		✻	2SA1242Y	TRANSISTOR		
Q1805			2SA1314C	TRANSISTOR		
Q1806		✻	UN221N	TRANSISTOR		

MD MECHANISM (D40-1656-05) MDM-99A

202	2A	✻	A10-3517-08	LD BASE	LCHSM0089AWZZ	
203	2B	✻	A11-1179-08	MD BASE	LCHSM0090AWZZ	
204	1A	✻	J19-6075-08	CRTRGE HLDR ASSY,LHLDX3005AWM1		
205	1A	✻	D10-3941-08	SLIDER LVR ASSY,MLEVF0051AWM1		
207	1A	✻	D10-3942-08	HOLDER ARM	MLEVF0046AWFW	
208	2A	✻	D10-3943-08	SWITCH PLATE	MLEVF0047AWFW	
209	2B	✻	D10-3944-08	H/A SHIFT ARM	MLEVF0048AWFW	
210	1A	✻	D10-3945-08	CAM PLATE LEVER,MLEVP0095AWZZ		
212	1A	✻	G01-4200-08	LOADING SPRING	MSPRD0132AWFJ	
214	3B	✻	G02-1703-08	GRIP SPRING	MSPRP0030AWFJ	
215	3A	✻	G02-1704-08	SHAFT SPRING	MSPRP0031AWFJ	
216	1A	✻	G01-4201-08	LOADING ARM SP,MSPRT0031AWFJ		
217	2A	✻	G01-4202-08	SHIFT ARM SP	MSPRT0032AWFJ	
218	1A	✻	D13-1992-08	LOADING GEAR(A)	NGERH0085AFZZ	
219	1A	✻	D13-1993-08	MID GEAR(A)	NGERH0086AFZZ	
220	1A	✻	D13-1994-08	MID GEAR(B)	NGERH0087AFZZ	
221	1A	✻	D13-1995-08	MID GEAR(C)	NGERH0088AFZZ	
222	2A	✻	D13-1996-08	MID GEAR(D)	NGERH0089AFZZ	
224	3B	✻	D13-1997-08	GRIP RACK	NGERR0004AWZZ	
227	3B	✻	D19-0322-08	DRIVE SCREW ASSY,NSFT0006AWM1		
228	3B	✻	D10-3946-08	PICKUP GUDE SHFT,NSFTM0019AWFW		
230	1B	✻	A01-3756-08	SHIELD CVR(TOP),PCOVS3029AWFW		
231	2B	✻	A01-3757-08	SHIELD CVR(SIDE),PCOVS3030AWFW		
232	3B	✻	A01-3758-08	SHIELD CVR(BTM),PCOVS3031AWFW		
233	1B	✻	J02-1478-08	CUSHION	PCUSG0045AWZZ	
236	1A	✻	G01-4203-08	GND SPRING	MSPRT0034AWFJ	
BA		✻	N39-1415-45	SCREW(1.4X1.5)	LX-BZ0040AWZZ	
BB			N38-2020-41	SCREW(2X2)	LX-BZ0046AWZZ	
BC			N09-3434-08	SCREW(1.4X2.5)	LX-BZ0800AFZZ	

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MDX-F1

PARTS LIST

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Ref. No	Address	New Parts	Parts No.	Description	Destination	Remarks
BD			N39-1750-45	SCREW(1.7X5)		
BE		✻	N09-5197-08	SCREW(1.4X3)		
BF		✻	N09-5198-08	SCREW(1.7X6)		
BG		✻	N39-1445-45	SCREW(1.4X4.5)		
BH		✻	N09-5199-08	SCREW(2X3)		
BJ		✻	N09-5200-08	SCREW(1.7X3)		
BK			N16-0014-46	WASHER(1.5X3.2X0.5)XWSSD14-05000		
BL			N39-1730-45	SCREW(1.7X3)		
BM			N39-1450-45	SCREW(1.4X5)		
CN1300		✻	E35-2588-08	WIRE HARNESS		
CN1931		✻	E40-8211-08	CABLE CONN(5P)		
CN1932			E40-8617-08	CABLE CONN(6P)		
CW1501	2E,3B	✻	E35-2587-08	FFC(28P)		
CW1931	2A,3A	✻	E35-2589-08	FFC(5P)		
CW1932	3A	✻	E35-2590-08	FFC(6P)		
M901	3A	✻	T42-0974-08	DISC MOTOR		
M902	3A	✻	T42-0975-08	FEED MOTOR		
M903	2B	✻	T42-0976-08	LOADING MOTOR		
MDPU	2B	✻	T25-0099-08	PICKUP		
MDRH	2B	✻	T30-0025-08	RECORD HEAD		
PWB-F	2A,3A	✻	J70-1414-08	PCB(MECHA)		
SW1930	2A	✻	S68-0126-08	PUSH SWITCH		
SW1931	2A	✻	S68-0127-08	PUSH SWITCH		
SW1932-34	2A	✻	S64-0049-08	PUSH SWITCH		
SW1936	3A	✻	S64-0050-08	PUSH SWITCH		
				CASSETTE MECHANISM (D40-1655-05)		
BM	2E		PENDING	BELT(MAIN)		
BR	2E		PENDING	BELT(REEL)		
PF	2E		PENDING	PINCH ROLLER ASSY (FWD)		
PR	2D		PENDING	PINCH ROLLER ASSY (RVS)		

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SPECIFICATIONS

Main unit

[Amplifier section]

Rated output power during STEREO operation
10 % T.H.D., at 4 ‰ ..... 4 W + 4 W

[Tuner section]

FM tuner section
Tuning frequency range ..... 87.5 MHz ~ 108 MHz

MW (AM) tuner section
Tuning frequency range ..... 531 kHz ~ 1,602 kHz

[MD recorder section]

Laser ..... Semiconductor laser
Recording method
..... Field modulation overwrite method
Audio compression ..... ATRAC
D/A Conversion ..... 1 Bit
Wow & flutter ..... Less than unmeasurable limit

[CD player section]

Laser ..... Semiconductor laser
D/A Conversion ..... 1 Bit
Oversampling ..... 8 fs (352.8 kHz)
Frequency response ..... 20 Hz~20 kHz
Wow and flutter ..... Less than unmeasurable limit

[Cassette deck section]

Track ..... 4-track, 2-channel stereo
Recording system ..... AC bias system
(Frequency: 105 kHz)
Heads
Playback / recording head 1
Erasing head 1
Motors 1
Fast winding time ..... Approx. 100 seconds
(C-60 tape)

[General]

Power consumption ..... 38 W
Standby power consumption ..... 0.3 W
Dimensions ..... W : 464 mm
H : 182 mm
D : 243 mm
Weight (net) ..... 5.4 kg

Speakers

Enclosure ..... Bass-reflex type
Speaker configuration
Speaker unit ..... 80 mm, cone type

Notice
KENWOOD follows a policy of continuous advancements in development. For reason specifications may be changed without notice.
● The full performance may not be exhibited in an extremely cold location (under a water-freezing temperature).

Note:
Component and circuit are subject to modification to insure best operation under differing local conditions. This manual is based on Europe (E) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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